



Assignment 2 – Feasibility Analysis

Systems Development Process

AIT 610

MICA Health Solutions

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Implementation of MICA Health Solutions to Amic Hospital

Solution Overview

Amic General Hospital is currently facing significant problems in its operational efficiency, and this is drastically reducing the quality of care and healthcare delivery provided. Systematic reports have shown that Amic General Hospital lacks the infrastructure to actively review patient records alongside providing proper medication. Due to this lack of infrastructure, the growth in visits to the hospital will continue to surpass the rate at which medications are administered. Inefficiencies like these hinder the hospital's ability to improve the healthcare system provided.

MICA Health Solutions is a well-designed web application created to improve clinical management, manage appointments, and update patient health records. MICA Health Solutions will enable Amic General Hospital to improve its healthcare services by allowing patients to book appointments online, interact with doctors, and receive appropriate treatment after consultations. Doctors will be able to access real-time health records of patients through a platform that unifies all these features, including clinical management.

By automating processes like scheduling, clinical management, invoicing, real-time tool tracking, and authentication, the MICA health solution will drastically reduce the operational expenses of the hospital. The system ensures the protection and accuracy of clinical data processed by the hospital, thereby increasing patient satisfaction. Additionally, it will comply with the rules and regulations of HIPAA, provide future revenue development in terms of scalability, and facilitate data-driven insights to promote ongoing improvements in patient care.

The following paragraphs will delve into the technical, organizational, and economic feasibility of the system to ensure cohesive implementation.

Technical Feasibility

Based on the project's scope, the technical aspects of the project include:

- **Infrastructure:** Amic Hospital would need to ensure robust hardware and software infrastructure for online portals, databases, and integrated inventory systems. This includes servers, secure storage for medical records, and adequate networking bandwidth.
Risk Assessment: High (H) risk is due to the high cost of hardware, software, and storage infrastructure.
- **Integration:** The system requires seamless integration with existing hospital management systems for patient management, clinical, billing, inventory, and compliance. The success depends on the compatibility between the current systems and MICA Health Solutions.
Risk Assessment: Medium (M) risk indicates that problems will be reduced due to the department's expertise with similar system integrations.

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- **Security & Compliance:** Implementing advanced security features such as multi-factor authentication and encryption to protect sensitive patient data is critical. Ensuring compliance with data protection regulations like HIPAA will require additional software and security measures.

Risk Assessment: High (H) risk is due to the importance and sensitivity of patient clinical data and the consequences of breaking the law.

- **Skillsets & IT Support:** The IT department at Amic Hospital will need the necessary skills to implement and maintain the system. Hiring external consultants or providing additional training may be necessary.

Risk Assessment: Medium (M) risk, knowing that the current staff in the hospital have experience with related projects, more training will be implemented to ensure that staff have a more robust understanding of the system.

In summation, the project is highly feasible theoretically. Still, it will cost a significant amount of money to secure the infrastructure and system integration skills. After careful consideration of the above parameters, the technical feasibility is assessed as medium risk. This evaluation considers the number of people who have the expertise, as well as the demand to invest in qualified and safe infrastructure.

Organizational Feasibility

The organizational feasibility focuses on whether the hospital has the human resources, management support, and operational readiness for the system.

- **Management Support:** The Chief Medical Director has approved the project, which is an essential factor for organizational backing. The project is also marked as a high priority for Amic Hospital, indicating strong institutional support.

Risk Assessment: Low (L) risk, because of the combination of strong management support, clear prioritization, and previous experience with similar projects.

- **Staff Readiness:** The system will require training for both medical staff and administrative workers to ensure they can effectively use the new tools, especially in clinical management and billing systems. Medical workers will need to adapt to new workflows and online portals.

Risk Assessment: Medium (M) risk, due to their expertise in the field, staff can easily transition successfully with the right support system given the scale of training required. However, familiarity with past training initiatives suggests that staff can transition successfully with proper support.

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- **Change Management:** Introducing MICA Health Solutions will require significant organizational change, particularly in task management, clinical processes, and patient interactions. The hospital must have a solid plan for change management, including training and communication with employees and patients.
Risk Assessment: Medium (M) risk, the success of change management highly depends on the hospital's ability to manage resistance. However, with the combined strengths of management, well-established processes, effective communication, adequate training, and past experiences, all these factors contribute to a low-risk assessment for change management.
- **Cultural Fit:** The hospital's current workflows will need to adjust to incorporate digital patient interactions, appointment scheduling, and remote access to medical records. The staff's willingness to adapt will be crucial.
Risk Assessment: Medium (M) risk, this is due to the potential resistance from staff members accustomed to traditional workflows. However, the hospital has a history of digital initiatives that support its capacity for adaptation.

Conclusion: The project has strong organizational backing but requires an investment in training and change management to ensure the hospital staff can successfully transition to the new system. The highest risk lies in change management, which necessitates a well-structured strategy to reduce resistance within the hospital departments. Overall, the project is sound from an organizational standpoint, and with careful planning and deliberate expenditures in change management and training, there will be a smooth transition.

Economic Feasibility

MICA Health Solutions will integrate various healthcare management functionalities, including patient registrations, appointment scheduling, electronic health records (EHR), billing, and reporting. The economic feasibility evaluates the financial viability of the project, including the costs and expected returns. The system will aim to improve patient quality care, increase staff efficiency and productivity, and reduce the hospital's overall expenses.

- **Costs:** The costs include infrastructure upgrades (servers, security systems), software licenses for MICA Health Solutions, employee training, and ongoing maintenance. There may also be costs associated with ensuring compliance with healthcare data protection laws. All these costs can be classified as developmental costs, which are the costs associated with the development of the system, or operational costs which are the expenses a business incurs to maintain its day-to-day operations. First, we have developmental costs, the total cost for creating this system will be \$404,300.

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Development costs:

Item	Cost (\$)
Project Manager	98,000
Software Engineer	150,000
Business Analyst	62,500
Web Designer	20,000
Data Analyst	40,000
Quality Assurance	33,000
Total	404,300

Next, we have the operational cost, which as noted earlier is the total expenses for managing daily operations. The annual operational costs vary because of multiple factors such as inflation and annual salary increases.

Operational costs:

Operational costs						
301	Maintenance and updates	-	80,860.00	80,860.00	80,860.00	80,860.00
304	Hardware Server	-	30,000.00	31,140.00	32,323.32	33,551.61
305	Hardware Network	-	33,000.00	34,254.00	35,555.65	36,906.77
306	Labor: Cyber Security Analyst	-	134,000.00	139,360.00	144,934.40	150,731.78
307	Staffing Training (on going)	-	30,000.00	10,000.00	10,000.00	10,000.00
308	Misc.	-	10,000.00	10,000.00	10,000.00	10,000.00
	Total operational costs	-	307,860.00	295,614.00	303,673.37	312,050.15

With the implementation of MICA Health Solutions, the hospital can save on multiple costs which include:

- **Decreased Costs** – there will be a cost saving of 10% annually from the \$500,000 dedicated to the current system with the integration of MICA Health Solutions for a total of \$50,000 annual savings.
- **Inventory Savings** – the system will eliminate the carrying cost of inventory, which is typically 40% of the inventory costs. The hospital currently spends \$500,000 on inventory for a total of \$200,000 savings per year.
- **Revenue Impact:** Offering easier access to medical records, online appointments, and messaging services is likely to improve patient satisfaction, attracting more patients and potentially increasing revenue for the hospital.
- **Intangible Benefits:** Increased customer satisfaction and streamlined workflows may lead to higher patient retention and a better reputation in the healthcare market.
- **Return on Investment (ROI) & Break-even Point:** With the incorporation of MICA Health Solutions, the organization's ROI based on its spending is 47.87%, which is highly profitable. The organization can expect to completely neutralize its spending and start accumulating revenue within 2.02 years.

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Conclusion: Economically feasible, with significant cost savings and improved operational efficiency that will result in a positive return on investment (ROI) within a reasonable timeframe.

Low-Risk Assessment

With a score of 1,515 points, this project is assessed as low risk due to several mitigating factors provided in the supporting document. The support from hospital management, coupled with the strategic planning around infrastructure, training, and experience of users, reduces potential challenges. Additionally, the anticipated cost savings and revenue generated further reduce financial exposure, providing a robust safety net for the hospital. With comprehensive change management and training initiatives, the likelihood of operational disruptions is significantly lowered, enhancing overall project stability.

Recommendation Summary

The feasibility assessment indicates that the MICA Health Solutions system project is technically viable with proper integration and security measures. Organizationally, stakeholders' support both internal and external as well as effective change management strategies are critical for successful integration. Economically, the projected benefits suggest a favorable return on investment, justifying the execution of the project.

These benefits include:

- Improved patient care – enhanced communication among healthcare providers and patients, and quick access to records allowing for timely decision-making
- Increased efficiency – routine tasks such as scheduling, billing, and record-keeping can be automated, reducing administrative burdens
- Better Data Management – all patient's data is stored in a centralized database, making it easier to manage and retrieve records
- Cost savings - automation, improvement, and integration of processes lead to significant reductions in operational costs
- Resource management and Decision-making – various resources will be available for staff to utilize to make informed decisions

Overall, the implementation of MICA Health Solutions can significantly transform healthcare delivery, leading to enhanced operational efficiency and improved patient care outcomes.