

Planning & Vendor Selection in Healthcare IT

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MHA621
Healthcare Informatics

Lecture 6



Intended Objectives

1. **Describe the Project Management Life Cycle (PMLC)** and its key phases in healthcare IT implementation.
2. **Differentiate between project planning and strategic planning** and their roles in healthcare information systems.
3. **Identify key stakeholders in healthcare IT projects** and explain their impact on system success.
4. **Analyze the role of SWOT analysis in healthcare IT decision-making** and system evaluation.
5. **Evaluate software selection criteria and vendor assessment factors** in choosing healthcare information systems.

Project Management Life Cycle (PMLC)



Project Management Life Cycle (PMLC)

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➤ **Phases:**

1. **Design/Plan:** Define project scope, goals, and timelines.
2. **Implementation:** Execute the project plan.
3. **Monitoring and Control:** Track progress and manage risks.
4. **Evaluation:** Assess project outcomes.

Project Management Life Cycle (PMLC)

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- **Lessons Learned:** Document successes and failures for future projects.
- **Practical Insight:** Each phase should include clear deliverables and milestones to ensure the project stays on track.

Project Planning *Vs.* Strategic Planning



Project Planning Vs. Strategic Planning

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- **Project Planning:** Focuses on the **execution** of **specific tasks, timelines, and resources** to achieve **short-term objectives**.
 - **Example:** Implementing a new EHR system within **12 months**.
- **Strategic Planning:** Focuses on **long-term goals** and **aligning resources** to achieve the **organization's vision**.
 - **Example:** Becoming a **leader in telehealth services** over the next **5 years**.

- **Project planning should always align with the broader strategic plan to ensure resources are used effectively.**



Stakeholders in HIT Projects

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➤ Key Stakeholders:

- **Leadership:** Provides funding and strategic direction.
- **Clinicians:** End-users who will interact with the system daily.
- **IT Staff:** Responsible for system implementation and maintenance.



Stakeholders in HIT Projects

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➤ Key Stakeholders:

- **Patients:** Ultimately benefit from improved care and data accessibility.
- ✓ **Practical Insight:** *Engage stakeholders early* to ensure *buy-in* and *gather input on system requirements*.
 - ✓ **For example**, clinicians can provide *feedback on workflow integration*.



SWOT Analysis in HIT

- **Definition:** A strategic tool used to identify “Strengths”, “Weaknesses”, “Opportunities”, and “Threats” related to a project or organization.
- **Application in HIT:**
 - **Strengths:** Existing IT infrastructure, skilled staff.
 - **Weaknesses:** Outdated systems, lack of interoperability.
 - **Opportunities:** New technologies, government incentives.
 - **Threats:** Cybersecurity risks, budget constraints.

SWOT Analysis in HIT

- **Practical Insight:** Use *SWOT* to *justify the need for a new system or upgrade*.
- **For example**, if the current system lacks interoperability (**weakness**), a new system that supports data exchange (**opportunity**) may be justified.

Information Management Components



Information Management Components

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➤ Key Components:

1. **Software:** Applications used to process and manage data (e.g., EHR systems).
2. **Hardware:** Physical devices like servers, computers, and tablets.
3. **Data:** The data collected and stored in the system.
4. **Network:** The infrastructure that connects devices and allows data sharing.

Information Management Components

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- **Practical Insight:** healthcare informaticists play a key role in ensuring the system meets clinical needs.
- **For example,** healthcare informaticists can advocate for user-friendly interfaces that reduce the number of clicks required to enter data.
- **They collaborate** with **clinical staff** during the **design phase** to ensure documentation templates **align** with **clinical workflows**, enhancing **usability** and **adoption**.

Software Selection Criteria



Software Selection Criteria

➤ Key Questions to Ask:

- **Open Architecture:** Does the system allow for customization and integration with other systems?
- **Compliance with Standards:** Is the system compliant with **HL7**, **SNOMED**, and **LOINC** standards?

Open Source vs. Closed Source Systems

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➤ Open Source:

- **Advantages:** Lower cost, flexibility to customize, community support.
- **Disadvantages:** Potential security risks, lack of vendor support, may require more IT expertise.

➤ Closed Source:

- **Advantages:** Vendor support, reliability, often more user-friendly.
- **Disadvantages:** Higher cost, limited customization, potential vendor lock-in.

- ✓ **Practical Insight:** Consider open source for smaller organizations with limited budgets, but ensure you have the IT expertise to manage it.

- **HL7 (Health Level Seven International):**
 - **Description:** A set of international standards for the exchange, integration, sharing, and retrieval of electronic health information.
 - HL7 ensures that different healthcare systems can communicate seamlessly, supporting interoperability and data consistency.

- **SNOMED (Systematized Nomenclature of Medicine – Clinical Terms):**
 - **Description:** A comprehensive, multilingual clinical healthcare terminology.
 - It provides **standardized codes** for **diseases, symptoms, procedures, and other clinical content**, facilitating **accurate data** recording and **sharing** across systems.

- **LOINC (Logical Observation Identifiers Names and Codes)**
 - **Description:** A universal standard for identifying health measurements, observations, and documents.
 - **LOINC is widely used for laboratory and clinical test results, ensuring consistent interpretation and exchange of medical data.**

Software Selection Criteria

➤ Key Questions to Ask:

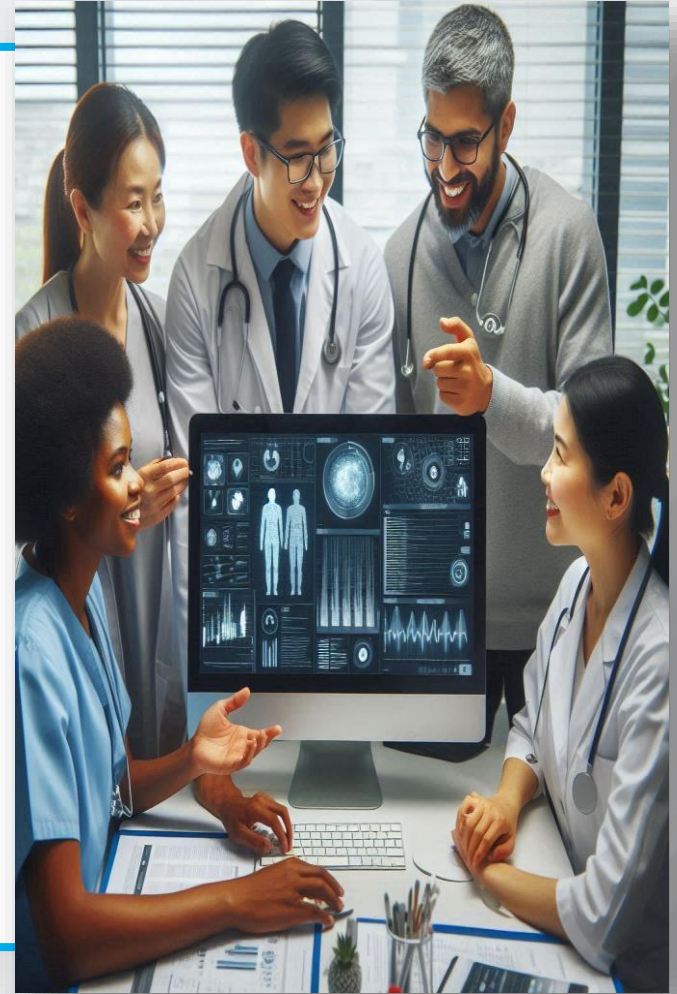
- **Support for Emerging Technologies:** Does the system support wireless devices, telemedicine, and e-health?
- **Cost:** What are the upfront and ongoing costs (e.g., licensing, training, support)?

➤ **Practical Insight:** Use a "*vendor evaluation matrix*" to score vendors based on these criteria and prioritize the most important features.

Sample - Vendor Evaluation Matrix

Criteria	Weight	X	Rating	=	Score
Service expertise	10	1	2	(3) 4	30
Sales expertise	5	1	2	3 (4)	20
Ongoing costs	10	1	2	3 4	
Usability	10	1	2	3 4	
Experience with industry	5	1	2	3 4	
Client service team	2	1	2	3 4	
Cultural fit	10	1	2	3 4	
Implementation timeframe	8	1	2	3 4	
Training services	10	1	2	3 4	
Credentials	10	1	2	3 4	
Customization capabilities	10	1	(2)	3 4	20
Financial viability	10	1	2	3 4	
Totals	100				345

Vendor Assessment Questions



Vendor Assessment Questions

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➤ Key Questions:

- **Company History:** How long has the vendor been in business? How many employees do they have?
- **Product Functionality:** Is the software modular or sold as a complete package?
- **Pricing:** Are licenses issued per user or concurrently? What are the costs for interfaces with other systems?

Vendor Assessment Questions

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➤ Key Questions:

- **Implementation:** Will the vendor handle hardware and software installation?
- **Ongoing Support:** What is the frequency of upgrades, and what level of technical support is provided?

➤ **Practical Insight:** Use these questions to narrow down vendors during the *“Request For Proposal (RFP)”* process.

Site Visits and Vendor Evaluation

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➤ Key Assessments During Site Visits:

- **System Reliability:** How much downtime does the system experience? What is the response time?
 - **Training Requirements:** How much training is needed for users to become proficient?
 - **Customization:** Can the system be easily customized to meet specific needs?
 - **User Feedback:** What do current users like or dislike about the system?
- ✓ **Practical Insight:** Site visits provide real-world insights into how the system performs in a live environment.

One Vendor vs. Best of Breed

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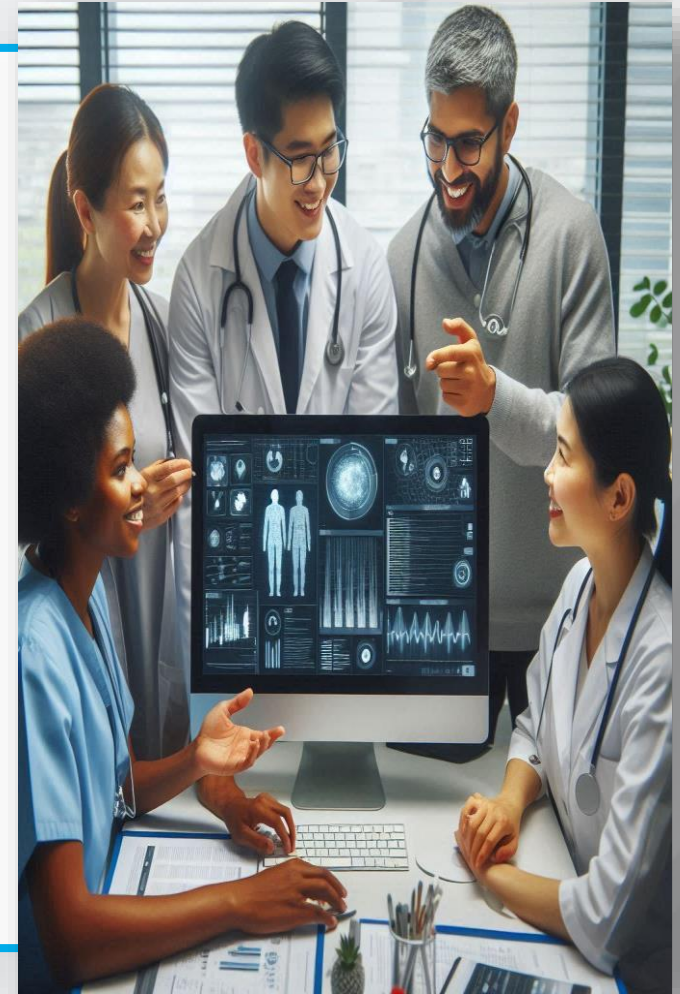
➤ **One Vendor:**

- **Advantages:** Standardized system, easier interoperability, single point of contact for support.
- **Disadvantages:** Limited flexibility, potential lack of cutting-edge features.

➤ Best of Breed:

- **Advantages:** Access to the best technology for each function (e.g., billing, clinical documentation).
 - **Disadvantages:** Complexity in integrating multiple systems, higher IT expertise required.
- ❑ **Practical Insight:** *For large organizations*, a “best of breed” approach may offer more flexibility but ***requires strong IT support*** to manage integration.

Extra Details for Consideration



1. *Configurability and Interoperability*

A. Configurability

- Configurability refers to the ability of a software system to be adapted to meet the specific needs of users **without requiring extensive programming or modifications** to its core structure.
- It allows healthcare facilities to **personalize workflows, settings, and user interfaces** according to their **operational requirements**.

1. *Configurability and Interoperability*

A. Configurability

- **Example:** Many Electronic Health Records (EHR) systems, provide configuration options like:
 - Customizing order sets for physicians
 - Modifying templates for patient documentation
 - Adjusting access control for different user roles
- **However,** some systems have limitations on deep customization, meaning users can only configure specific aspects while the core functionalities remain fixed.

1. *Configurability and Interoperability*

B. Interoperability

- Interoperability is the **ability of different healthcare systems to communicate, exchange, and use data seamlessly.**
- This ensures that various software applications—such as EHRs, laboratory systems, and pharmacy systems—work together efficiently to enhance patient care and reduce duplication of work.

1. Configurability and Interoperability

B. Interoperability

- **Example:** If a hospital adopts a new **EHR system**, it must be able to exchange patient data with an existing **laboratory information system (LIS)**.
- This ensures that test results flow directly into the patient's records without manual data entry, reducing errors and improving efficiency.
- **Interoperability is crucial for:**
 - Sharing **patient history** between hospitals and clinics
 - Enabling **telemedicine platforms** to integrate with EHRs
 - Facilitating real-time **pharmacy inventory updates**

2. *Ease of Use and Usefulness*

A. Ease of Use: How intuitive and user-friendly the system is.

- **Example:** Minimizing the number of clicks to enter data.

B. Usefulness: How well the system meets the needs of end-users.

- **Example:** Providing real-time alerts for critical lab results.

➤ **Practical Insight:** Conduct “**usability testing**” with end-users to ensure the system is both easy to use and meets their needs.

Wrap Up

1. **Project Management Life Cycle (PMLC)** includes phases such as design, implementation, monitoring, and evaluation.
2. **Project planning focuses on short-term execution**, while strategic planning aligns with long-term healthcare goals.
3. **Stakeholders play a critical role** in healthcare IT projects, including leadership, clinicians, IT staff, and patients.
4. **SWOT analysis helps in decision-making**, identifying strengths, weaknesses, opportunities, and threats in HIT projects.

Wrap Up

5. **Information management systems** consist of software, hardware, data, and networks essential for healthcare operations.
6. **Software selection criteria should consider** interoperability, compliance, cost, and emerging technologies.
7. **Vendor assessment is crucial** to ensuring system reliability, ongoing support, and scalability.
8. **Configurability and interoperability enhance system effectiveness**, ensuring user adaptability and seamless data exchange.



Thank You