

Building a Cathedral

Managing Complexity in Mega Projects

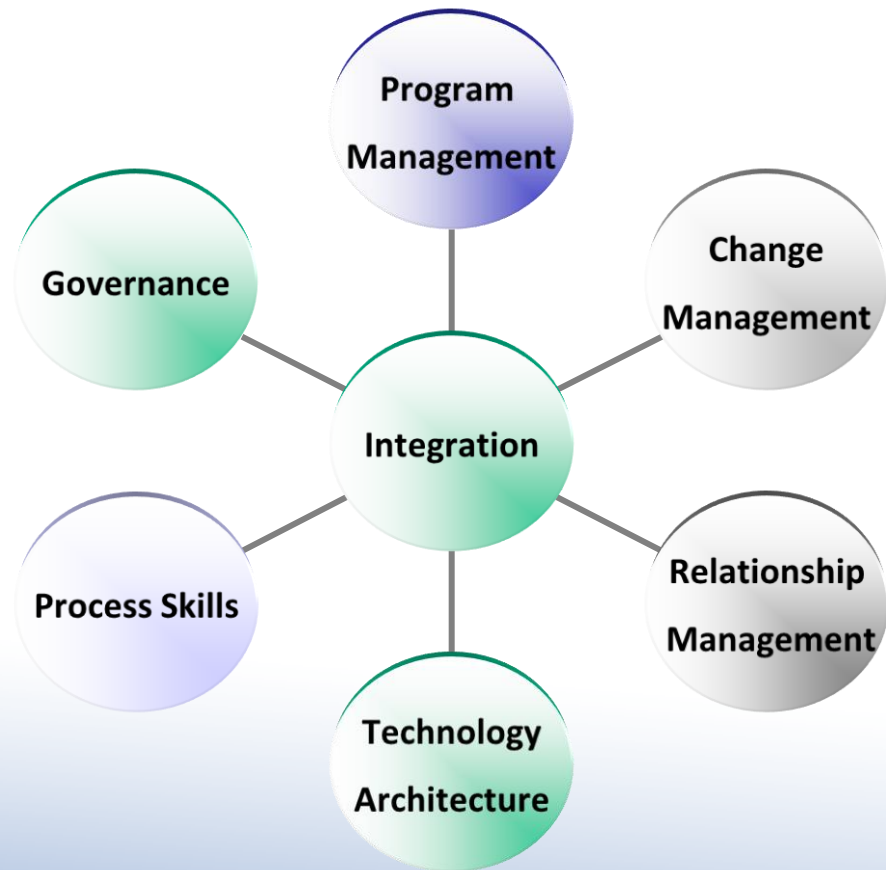


Mike Ryal, PMP

Edited version of RSC02 session presented by Laura Aziz, PhD, PMP

Session Outline

- **Introduction**
- **Mega Project**
- **Complexity**
- **PMO Role**
- **Enterprise Architecture**
- **Integration**



The Mega Project

Where do we start?

- **Building a Top-Notch Healthcare Facility**
- **Hotel-Style Amenities**
- **Outfitted with Modern Digital Technology**
- **EMR / Wireless / RFID / Telemetry**
- **Advanced Diagnostics - Imaging**
- **Robotic Surgery Capability**
- **Video-Conferencing / Broadcasting Capabilities**
- **Smart Building System with Enterprise Awareness**

Definition of Complexity

What is Complexity?

- Complexity is often tied to the concept of a **SYSTEM** – a set of **elements** which have **relationships** among them
- Complexity expresses a condition of numerous **elements in a system** and numerous forms of **relationships among these elements**
- Complexity tends to be used to characterize something with many parts in intricate arrangements or relationships
- What is complex and what is simple is relative and changes over time

Complexity Elements

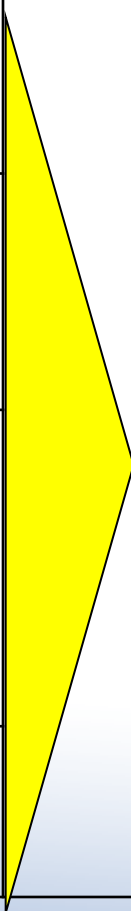
Conventional Factors

- **Number of Components**
- **Interrelationships and Interdependencies**
- **Number of Unknowns**
- **Degree of Uncertainty**

Mega-Project Factors

- **Dispersed Teams**
- **Time Horizon**
- **Chain of Command**
- **High-degree of Specialization**

Complexity Impact

Factors	Impact on the Project
Time Horizon: <ul style="list-style-type: none">• Multi-year• Multi-phase	 <p>As the complexity factors increase, the role of the PMO becomes more elaborate and complex.</p> <p>With complexity, a pressing need arises for:</p> <ul style="list-style-type: none">• advanced technology to coordinate and manage the project and an• increase in demand for advanced communication and status reporting tools.
Chain of Command: <ul style="list-style-type: none">• Multi-layers• Matrix Structure	
Specialization: <ul style="list-style-type: none">• High Degree of Specialization• Credentialed Professionals• Subject Matter Expertise• Cutting-Edge Technology	
Dispersed Teams: <ul style="list-style-type: none">• Virtual teams in multiple locations• Outsourcing to other countries/cultures	

Time Horizon - Simple



Request For
Proposals



Vendor Selection



Project Initiation



Jan Feb March April May June July Aug Sept Oct Nov Dec

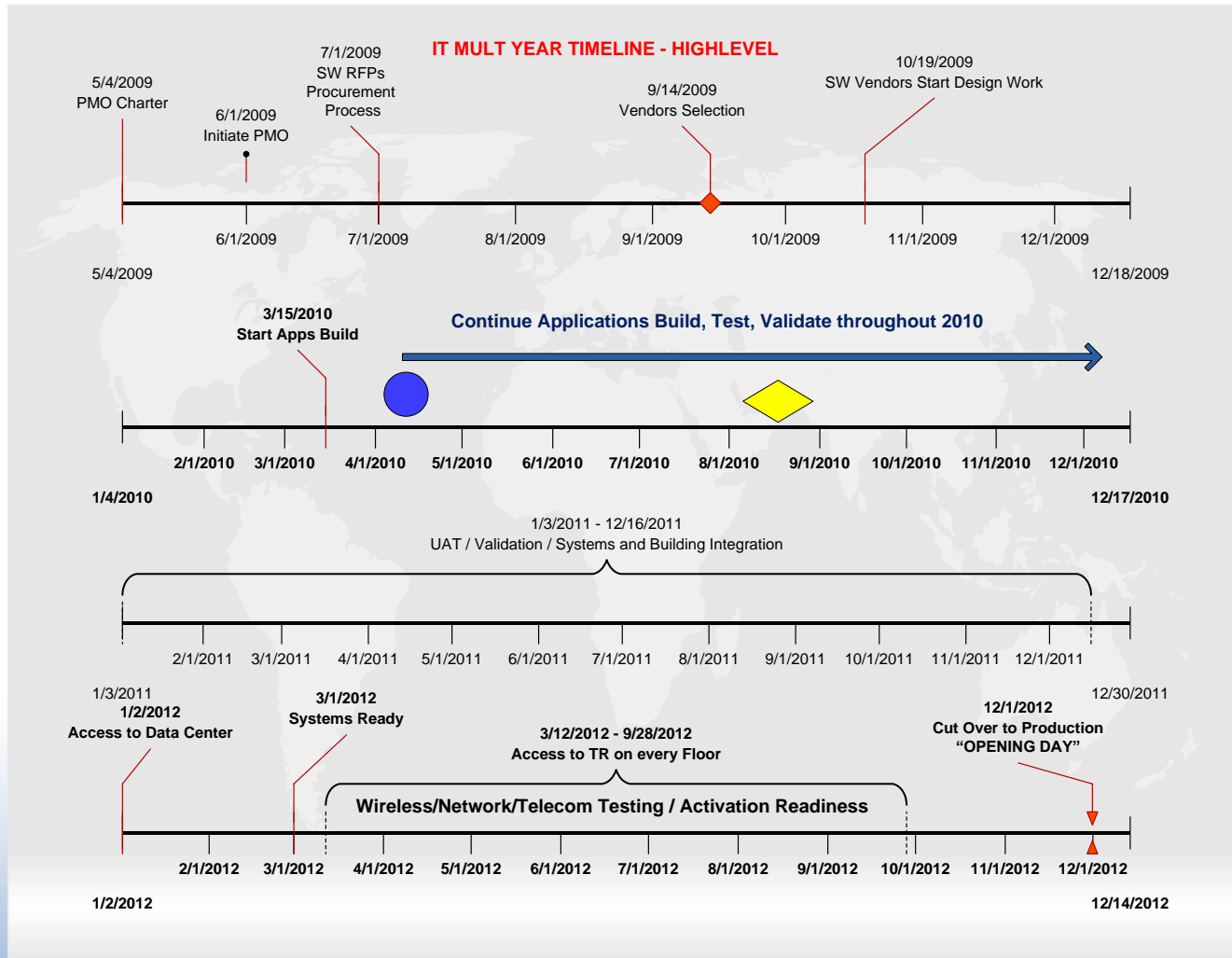
Vendor Demos



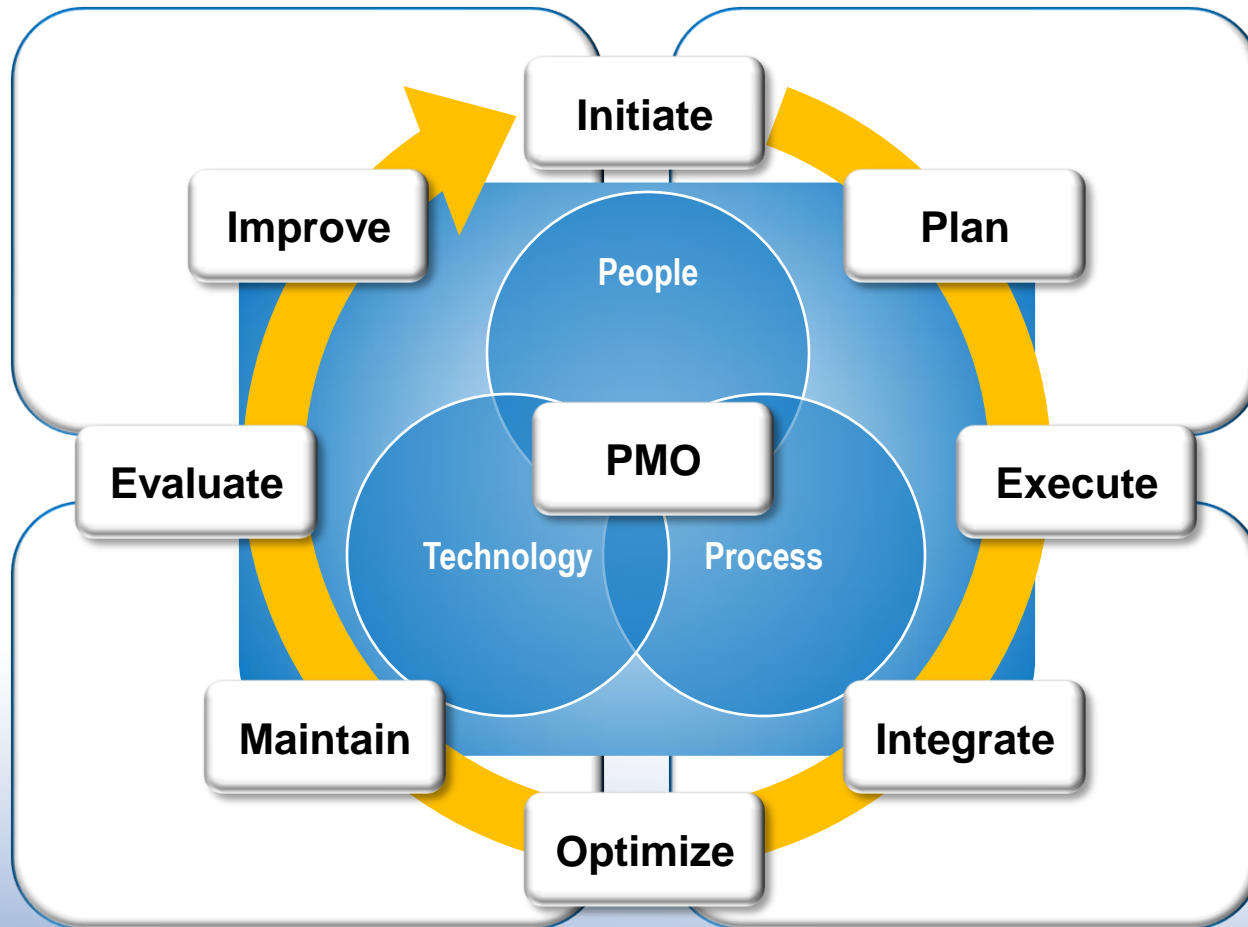
Contract
Negotiations



Multiyear IT Timeline - Complex



PMO Life Cycle



PMO Functions and Components



Project Office – Planning Approach

Lorenzo 3.5 Planning Controls & Reporting



1. Individual plan owners submit plans to Planning Team by 17:00 each Thursday

Planning@isofpic.com

2. Individual Plans are Consolidated into 1 Plan and an Excel export is uploaded into the database



4. Once Management decisions have been made regarding acceptance of slippage or if changes are approved then an upload of data into the various levels of management plans is carried out using import facility.

3. Once the latest data is uploaded into the database then several queries and reports are run and analysed and these are used to update the various reports so that management decisions can be made.

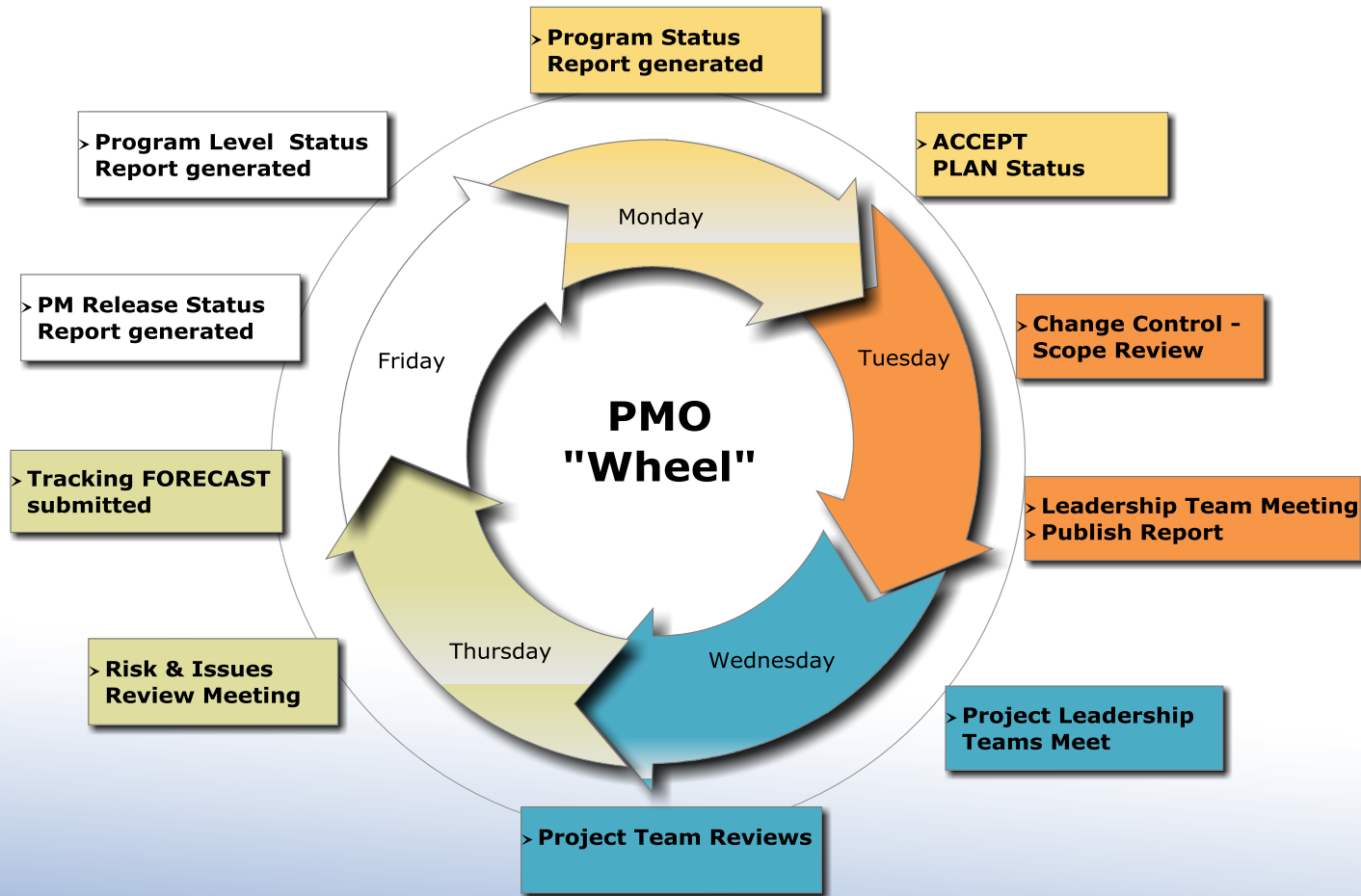


6. So by using the Unique Activity Coding the integrity of the Plan and the dates within it is maintained from the lowest detail plan through to the executive view.

This approach enables the customer to have the confidence that the dates shown are the dates being delivered to.



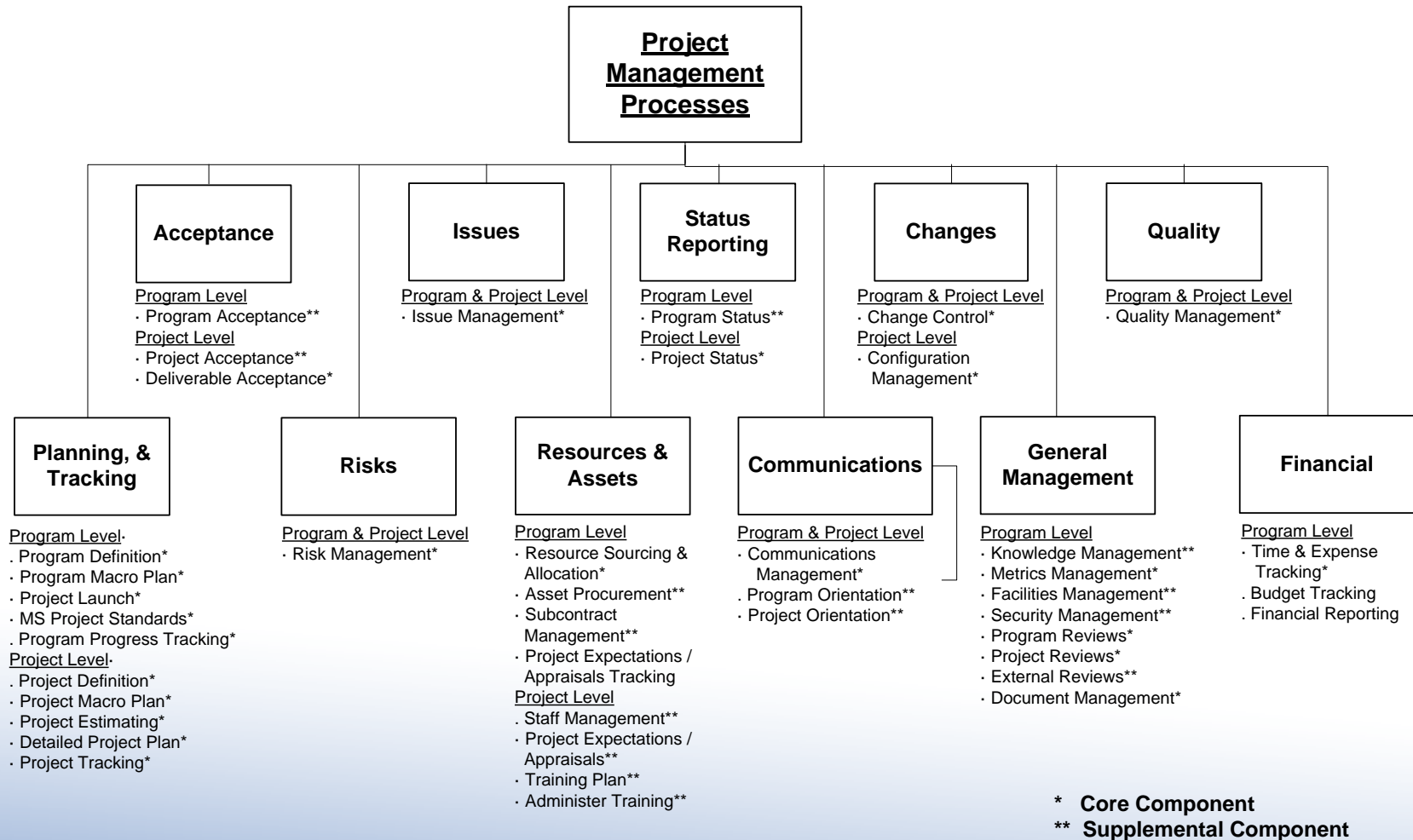
PMO Functions - Wheel



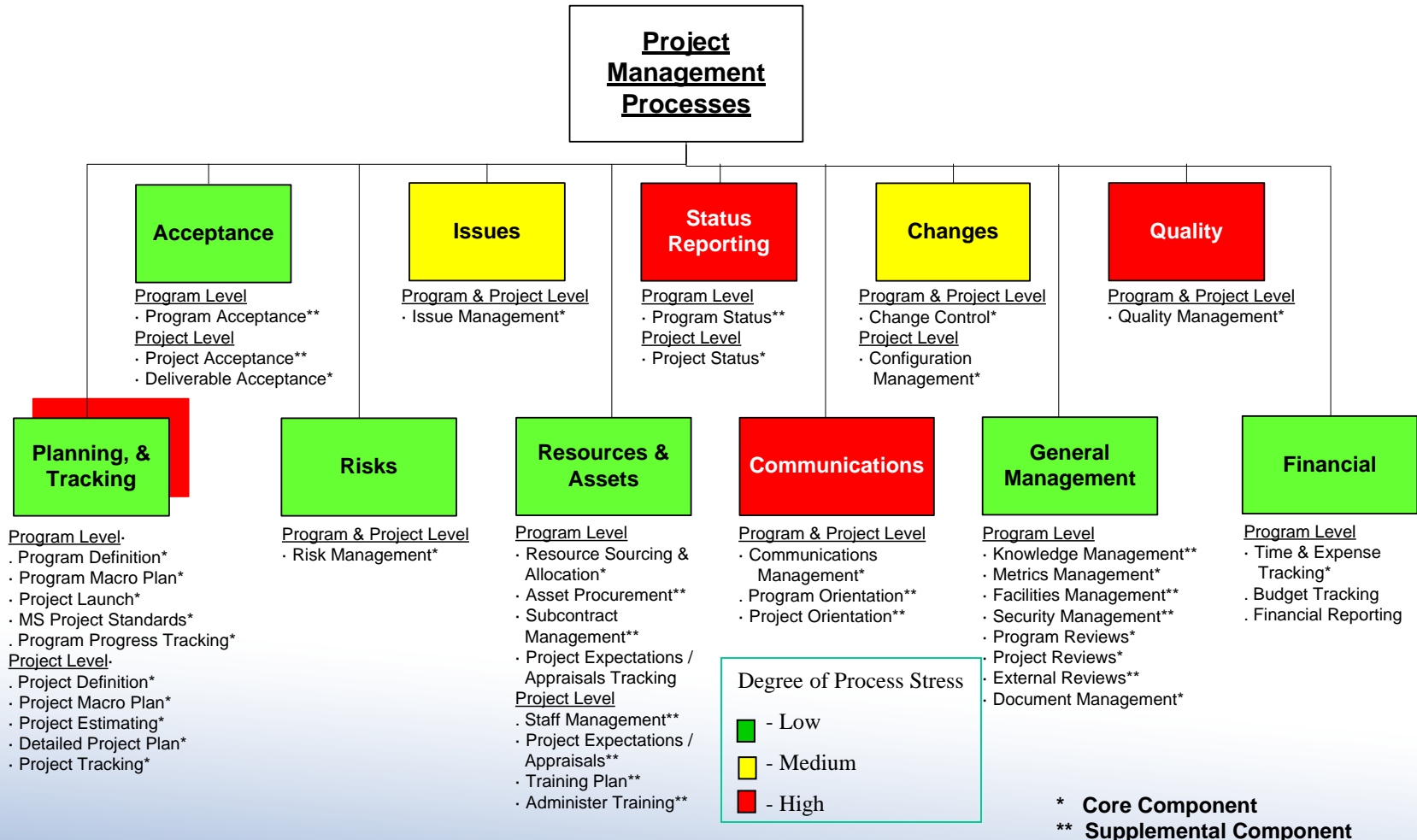
PMO Functions - Mega Projects

- **Vision and Strategy Alignment**
- **Governance, Leadership, and Oversight**
- **Communication, Coordination, and Collaboration**
- **Relationships - Conflict and Politics Management**
- **PMO Management Tools**
- **Business Plan Development**
- **Budget Development and Cost Management**
- **Defining and Developing Operating Models**
- **Risk Management**
- **Quality Management**

Traditional - PM Process Framework



Mega - PM Process Framework



Enterprise Architecture

- **Process**
- **Organization**
- **Location**
- **Data**
- **Applications**
- **Technology**



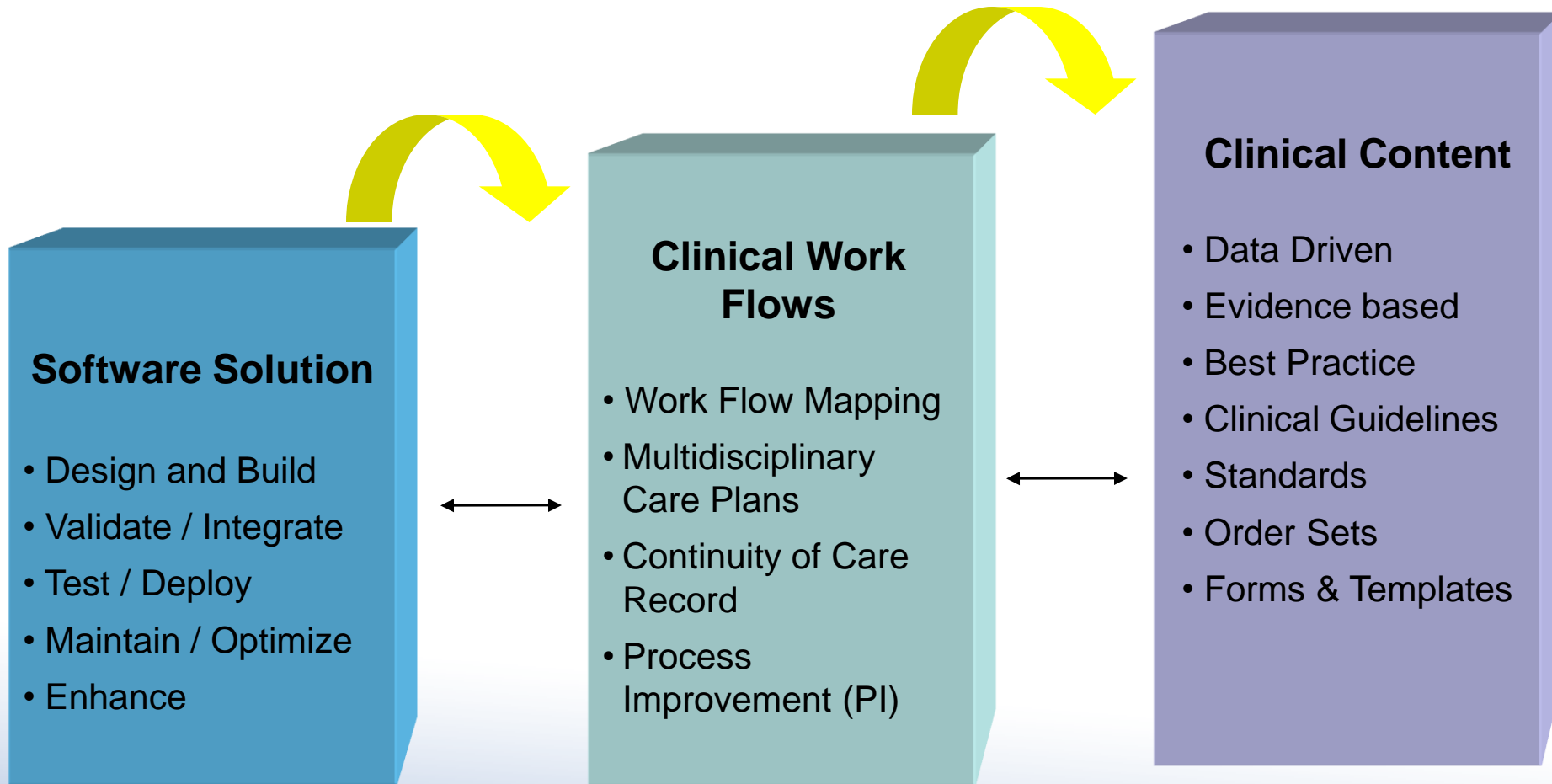
Enterprise Architecture – People

Knowledge and Expertise

- Experts – Competencies and Skills
- Leadership – The Know How
- Communication Skills
- Organization Structure
- Recruiting Approach
- Talent Management / Intellectual Capital
- Professional Development and Training
- Staff Motivation and Rewards System



Enterprise Architecture - Processes



A double loop feedback process exist between these three pillars of clinical process, application and content development

PMO & EA Integration Capabilities

Governance

- Formal structures and principles
- Decision-making authority
- Enable agreement and strategy alignment

Process Skills

- Process measurement and mapping
- Process and change management

Relationship Management

- Build organization connections
- Resolve tensions between silos
- Establish framework to attract, recruit and retain skilled resources

Program Management

- Coordinate goals and objectives
- Coordinate resources
- Understand interdependencies

Change Leadership

- Leadership available to teams, projects, and business and corporate units
- Change methodology

Technology Architecture

- Technology Infrastructure ready
- Inventory of applications solutions
- Understand data/information flow
- Understand integration requirements

c/o Cash, Earl, & Morison. Teaming Up to Crack Innovation and Enterprise Integration. HBR. November, 2008 www.hbr.org

IT PMO Engagement

Initiation

- **Charter Outline:**
 - IT Vision and Goals
 - IT Capabilities
 - IT Requirements
 - IT Gap Analysis
- **Resources:**
 - Project Manager
 - IT Leadership
 - Clinical Leadership
 - Business Leadership
 - Admin Leadership

Deliverables

- Project Charter, including, IT Vision and Goals
- Assessment of IT Capabilities
- Project IT Requirements
- Gap Analysis Report
- Assessment of Project and Organizational Impact
- Development of IT Cost Model
- Inventory of Hardware, Software, and Resources
- Development of IT Risk Assessment (exposure)

Assessment Framework

Vision and Strategy

Vision and Strategy:

- What are the strategic business goals?
- How will technology advances, regulations, strategies, and plans affect healthcare?

Governance

Governance, Leadership, and Oversight:

- How are IT decisions made?
- Do IT decisions support strategic business plans?
- How are the various functions of the organization represented?
- What is the process to define needs, priorities, plans, acquisitions, and support?

People / Process

Organization, People, Process, and Services:

- What is the IT organization structure?
- What types of resources are currently deployed in the country or organization?
- What are the skills and competencies of the current staff?
- What changes are required to support current and future needs?

Applications

Application Function:

- What applications are currently deployed?
- Do they meet current and future needs?
- Do they meet current regulatory compliance guidelines?
- Are there formal plans to replace/upgrade existing systems to meet needs?
- Are there existing preferred vendor agreements?

Technical Infrastructure

Architecture and Technical Infrastructure:

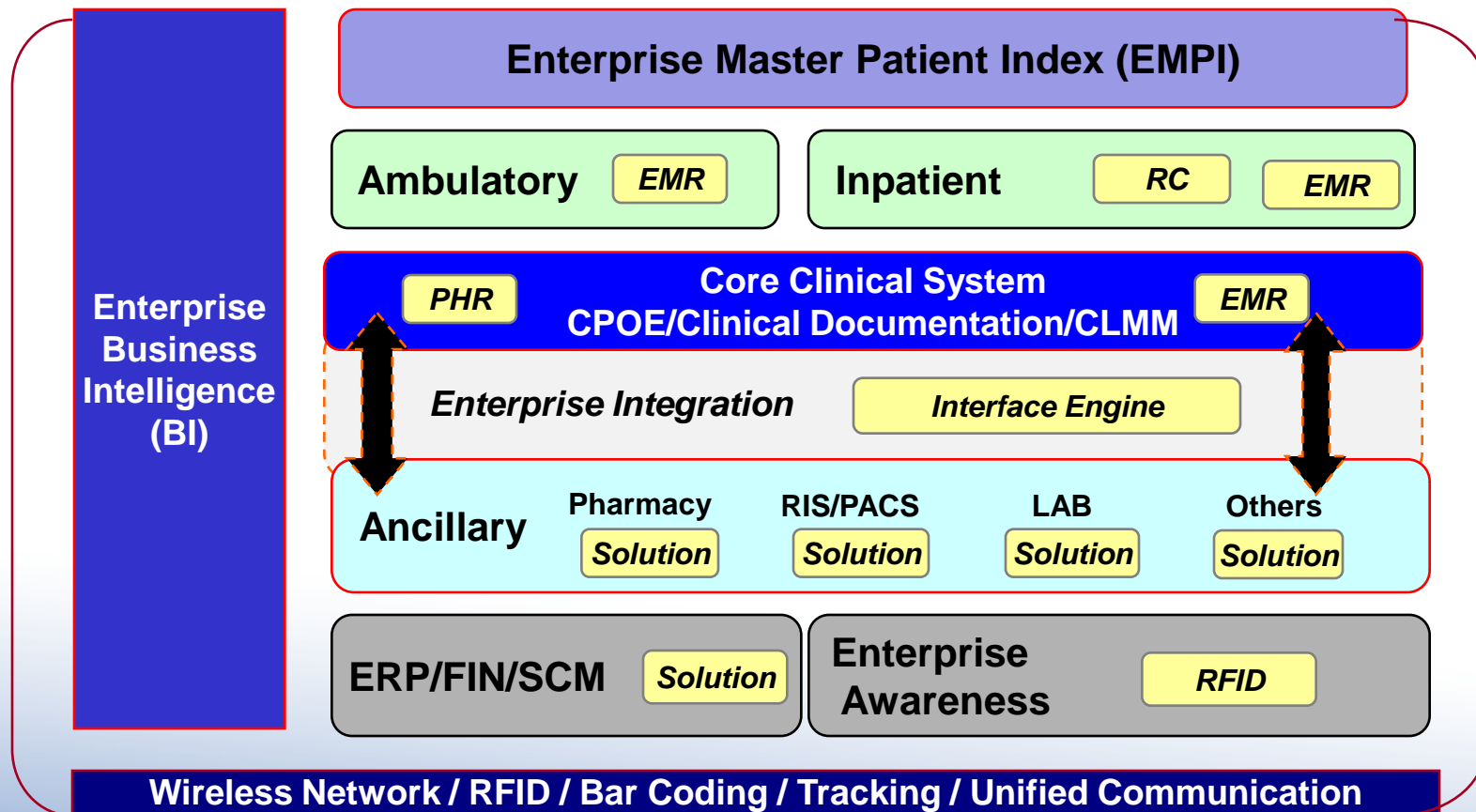
- What infrastructure components are currently in place?
- Are they meeting the current needs and future growth for connectivity and linkages?
- How are security and privacy issues being addressed?
- What are the existing capabilities that enable use of advanced technology?
- Can the existing technology support future expansion strategies?

Budget and Cost

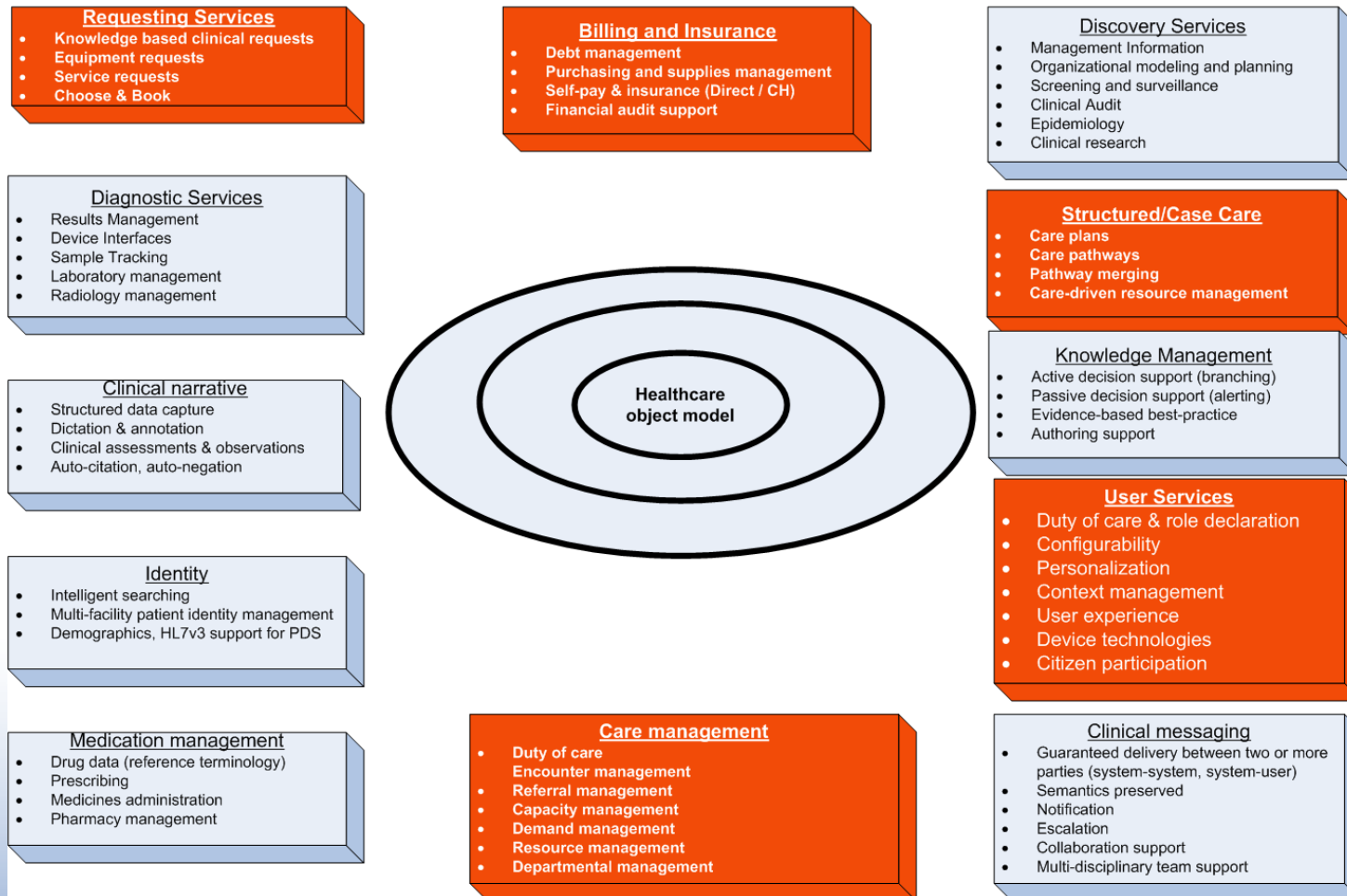
Budget and Cost Control:

- What is the annual budget (Capital/Operations) for Information Technology?
- Has ROI and TCO been assessed?
- Has there been any comparisons done with industry standards?
- Has customer satisfaction been evaluated?

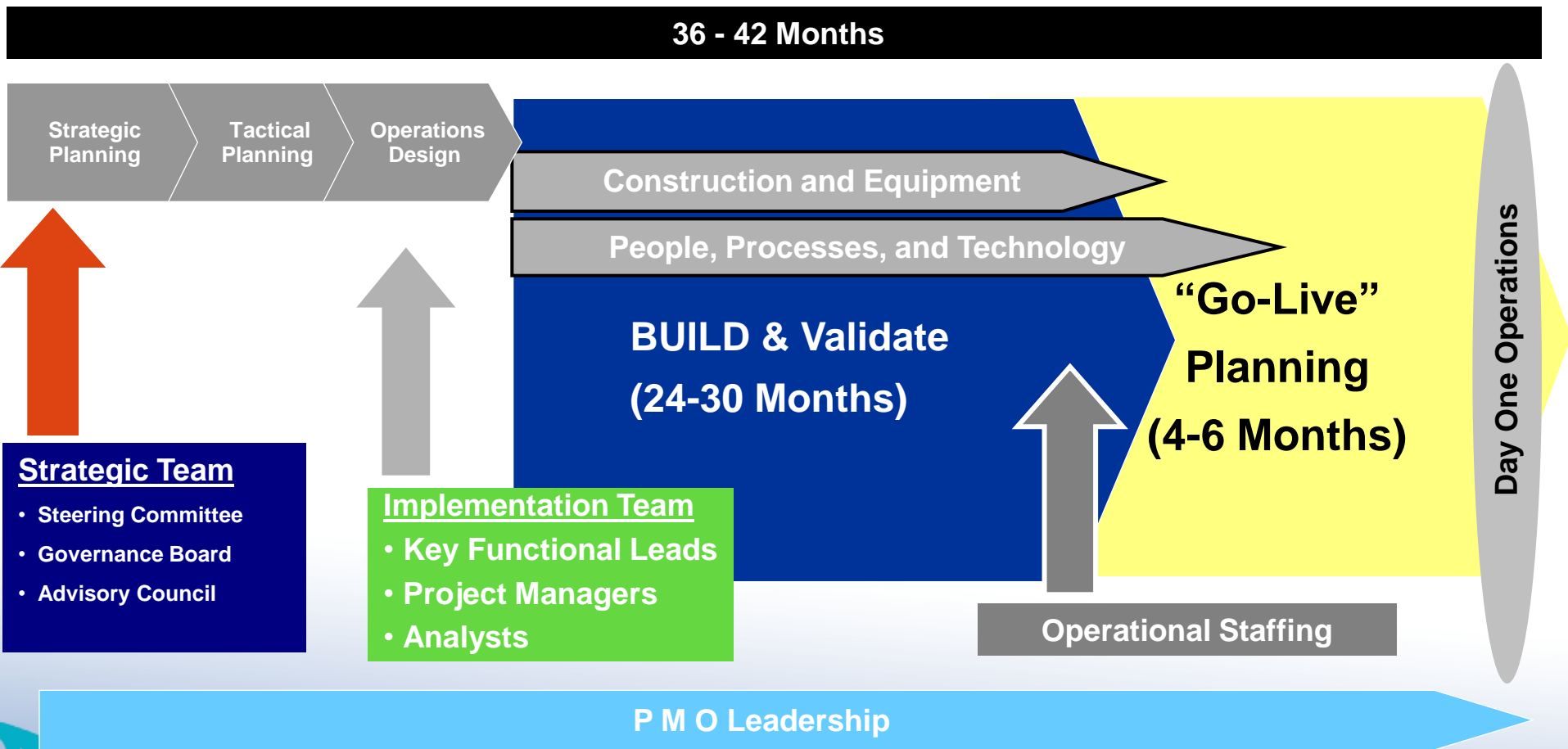
HIT Conceptual Model - Components Integration



HL7 Data Model - Components Integration



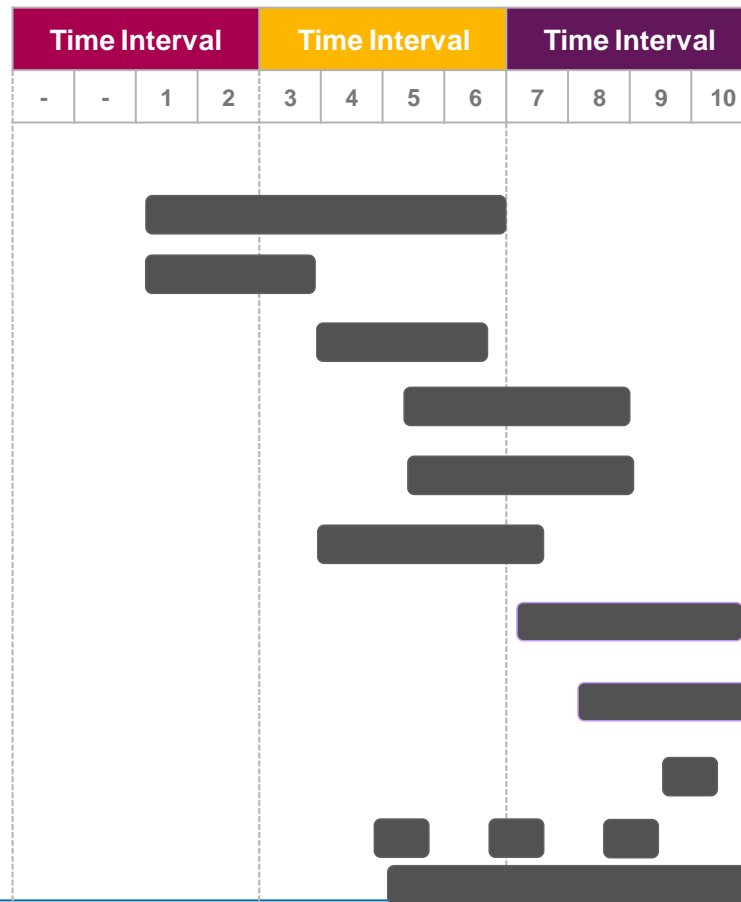
Projections for Execution Timeline



IT PMO Planning Process – Milestones - Roadmap

INTEGRATED WORKPLAN & MILESTONES TIMELINE - Sample

1. Construction Schedule
2. Phasing of Opening w/ 6 Months IT Countdown
3. Finalize Core Operating Models w/ IT Input
4. Finalize Ancillary Operating Models w/ IT Input
5. Construction – IT Infrastructure Dependency
6. Construction – Medical Equipment / IT Dep.
7. Update Operating Milestones
8. Revise IT Applications, Milestones & Schedule
9. NHIN Connections (major IT Dependencies)
10. Milestones/Review/ IT Dependency
11. Resource Requirements/Dependencies
12. Develop Business Operating Model w/ IT Input





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Mike Ryal has more than 25 years of IT industry experience, with the past ten years in Global Healthcare Technology Systems. He is accomplished in designing, implementing and supporting creative information systems solutions that meet strategic business requirements.

Mike is a Certified Project Management Professional (PMP) and frequently serves as a Subject Matter Expert (SME) for the Project Management Institute (PMI).

Key project experience in **healthcare** includes:

- *UK National Health Service (NHS) Program* – led the software design team as Program Manager for development of the iSoft Lorenzo application system. The SOA system was designed in England, developed in India, and deployed in releases across the England NHS healthcare trust organizations. More than 190 designers built system functional specifications under his direction.
- *Ascension Health* – served as the PMO Program Director for outsourced services accountable for Project Managers serving the nation's largest Catholic and non-profit health system.
- *New York State Medicaid claims service provider* – functioned as Program Manager for the Infrastructure team planning and creating the new data center facility.

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