

# Embarking on a multi year client transformation program

to improve patient care and  
clinical efficiencies at Rajiv Gandhi Cancer  
Institute & Research Centre, Delhi, India



# Background



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Oncology Super-speciality, 14 sub-specialities  
North India's largest oncology center  
250 beds, 35 high-dependency beds  
Over 100,000 patients treated  
ISO 9001 and ISO 14001 certified

Facilities include

- PET CT, MRI, IMRT, IGRT
- 6 linear accelerators & simulators in Radiation Oncology
- Bone Marrow Transplant Unit
- In-patient and Day Care chemotherapy

Plans to become the largest and most sophisticated oncology care center in South Asia



# Challenges

Accreditation (JCI and NABH)

Improving performance measures

Online Nursing and Clinical documentation

CPOE

Availability of data easily amenable for clinical research

Large volume of patients

Paper based record keeping

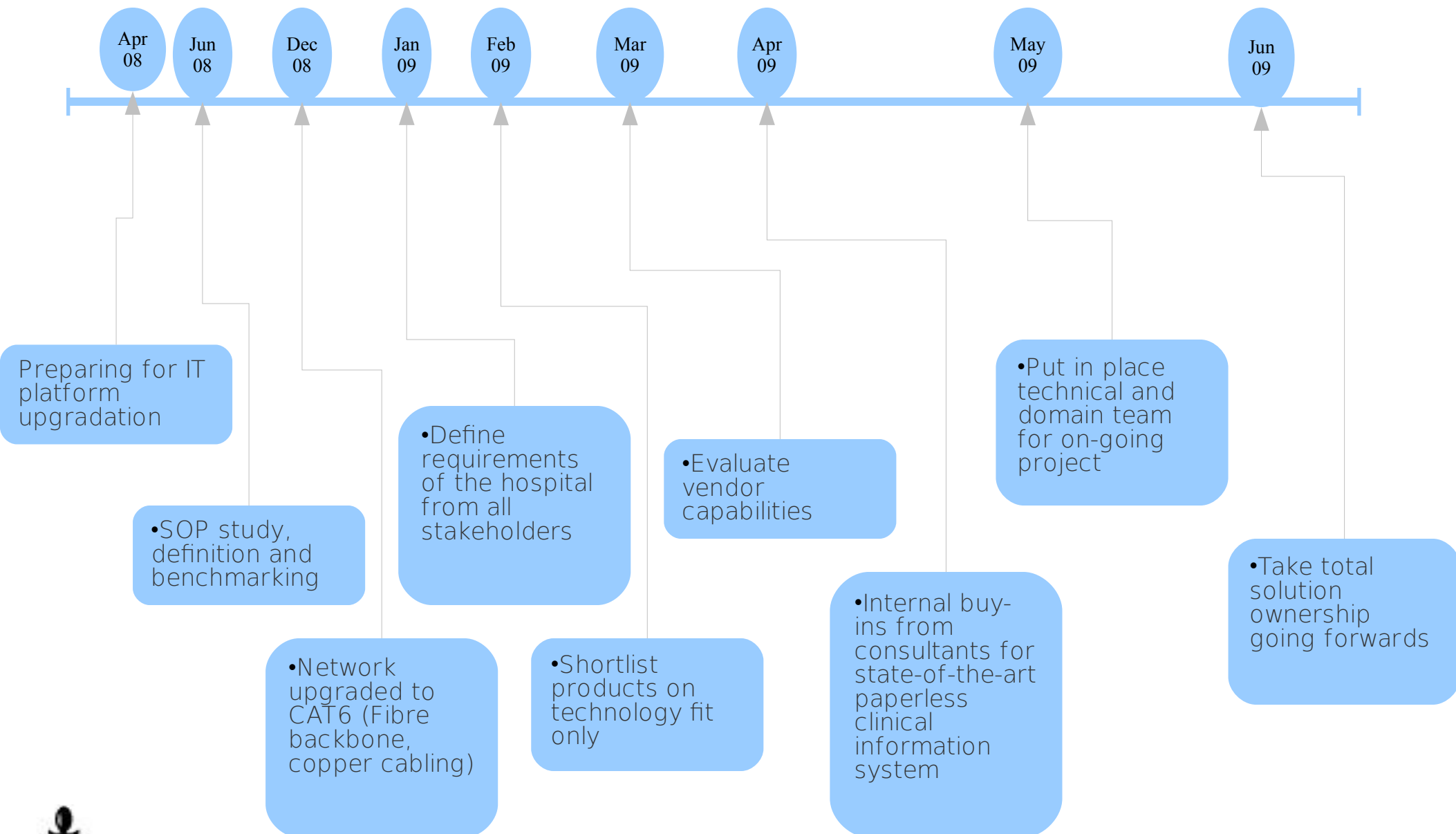
Integration of multiple systems



# Preparation



# Broad Plan of Action

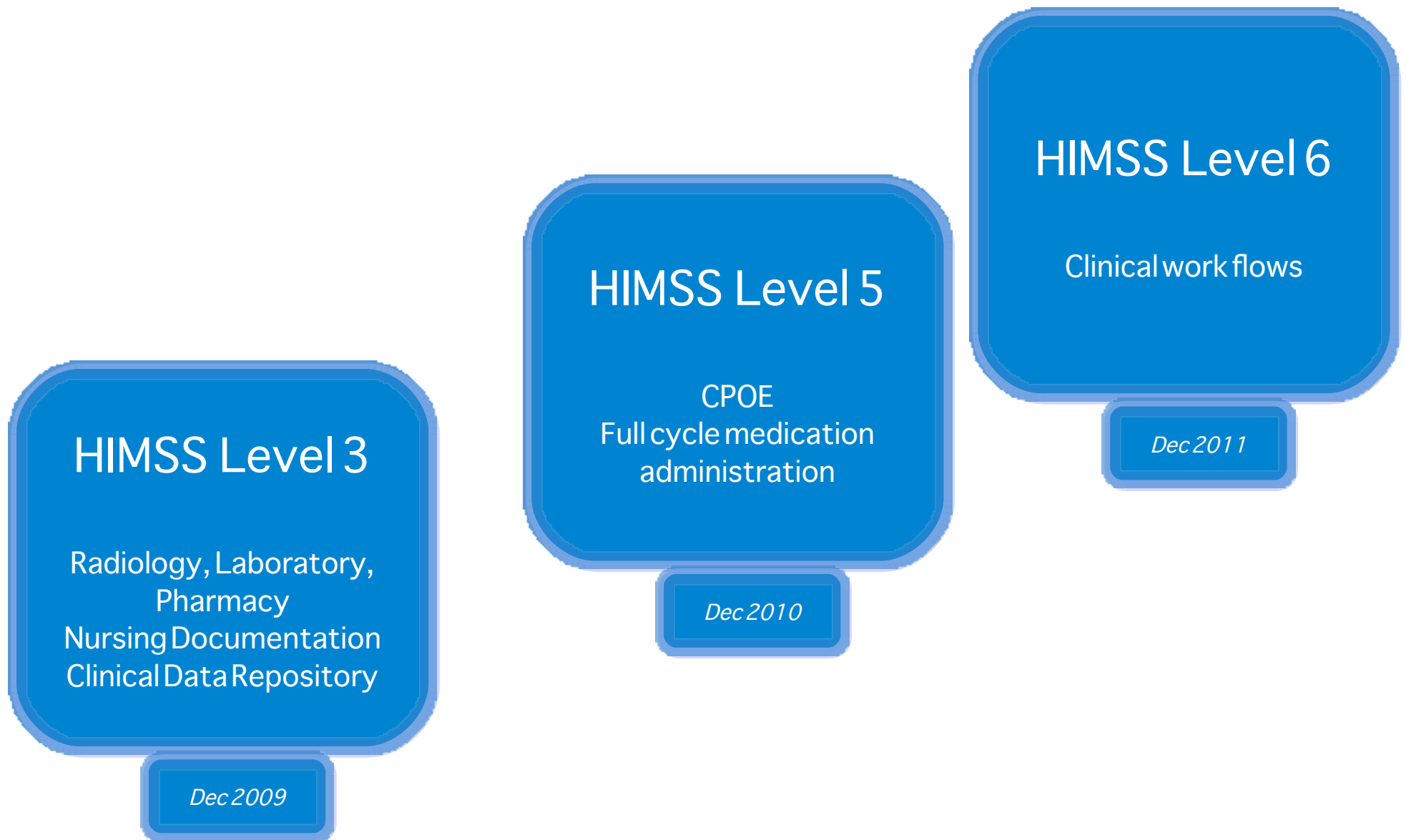


# Major goals



clinical transformation

# Clinical Transformation Goals



clinical transformation



# Objectives

Provide online Electronic Medical Records

Improve Patient treatment quality

Reduce Patient Turnaround times

Increase ability to treat more patients

Improve Operational efficiency

Increase reach through outpatient clinics

Reduce Costs associated with Patient treatment

Control 70% of costs related to Clinical Processes

Achieve cost reductions without impacting quality

Reduce errors, costs and efforts through the Patient Care life cycle

Seamless integration of multiple functions

Alerts/ reminders to International best practices and guidelines



# Objectives

Implement & Standardize Best Practices for Oncology care

Achieve standardization across the hospital

Perform at international standards

Provide a platform to support & facilitate research

Improve data capture and retrieval

Analyse & share data and findings

Facilitate measurement, tracking & improvement of Quality of Healthcare indicators

Gather data on top 20 Clinical Quality of Care Indicators

Achieve quality improvements through reengineered processes

Enable MIS and Operations

Provide online reporting and dashboards

Track critical processes



# Selection



# Requirements

	Needs	Required to fulfill
HIS	Scalability, support, Single sign on, unique patient id, ROI, interface to CIS, full HIS functionality, billing, registration	Knowledge of architecture and data model;
EMR/CIS	User engagement, configuration, process refinement, technology	CIS implementation capability, India specific solutions, SME's, VISTA expertise, Analytics
Integration	Inter-operability , robustness, standards, scalability, data co-existence	Interface engine, integration capabilities, business process regression cycle,
Infrastructure	Security, high availability, disaster recovery, scalability, Performance	Network architecture, Enterprise mission critical planning and execution, India specific expertise , Support and monitoring
Adoption	Change management, online content, continous support	India specific experience to train and support clinical users .
Support	Desktop, operations, product, application, User	Capacity Planning , Multi-level help desk capabilities, online help tools, SLA and help desk monitoring tools and remote diagnostic tools, Escalation/ Reporting, FAQ's, Knowledge management,
Clinical Transformation	Plan, Decision support, templates, Review Board, Order Sets, Alerts, Reminders, work flows, QOC Indicators, Clinical practice guidelines	Clinical Content /practices competence , chronic disease best practice guidelines, measures and achievements



# The Selection Process

- Twenty two vendors short listed through international tendering
- Detailed product evaluation using own experts and independent consultants
- 7 product vendors shortlisted technically, after several rounds of interaction
- Detailed product demos and vendor interactions, with active involvement of clinical and non-clinical teams of the hospital
- Site visits to client locations of 4 finalists vendors



# Parameters for Evaluation

## Functional Capabilities

- Non-Clinical
- Clinical
  - ➔ Oncology-readiness
  - ➔ Overall clinical workflow support

Easily usable

Business Intelligence support

Ease of Configurability

Technology Platform / Environment

- Openness
- Scalability
- Ease of use / support
- Total cost of ownership

Ability to Implement and Support over at least 5 years



# Final Short-list

3 vendors shortlisted finally for HIS and CIS

Commercial negotiations held with these 3 vendors

OHUMVista selected for Clinical Information System

OHUMVista Project implementation started on 11th May, 2009



# Decision making

feature	Pro's	Con's
Functionality	Doctor friendly, most cancer related work flows	Complexity of implementation and sophistication of use
Technology	Rapid, open source, license free, vendor independent, mature	Old, non browser, limited local experience
Road Map	Very much ahead of competition, in functionality and proven use; strong leadership by VA	Dependence on unknown community
ROI	Long term platform for major process and clinical productivities and efficiencies	Most expensive of all competing products
Implementation	Local vendor; Strong process and data demo's for Oncology	No local implementation, multi-vendor; integration
Support	Long term local support	

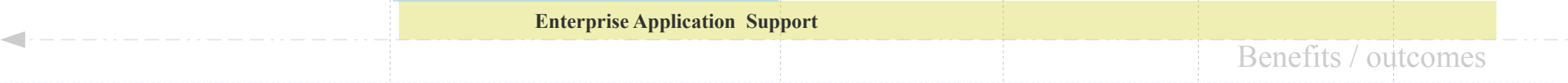
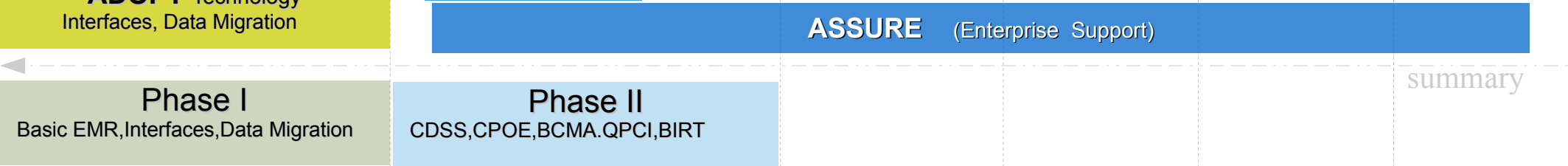
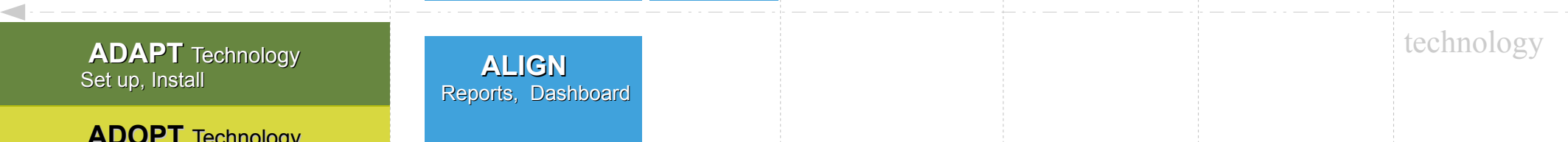
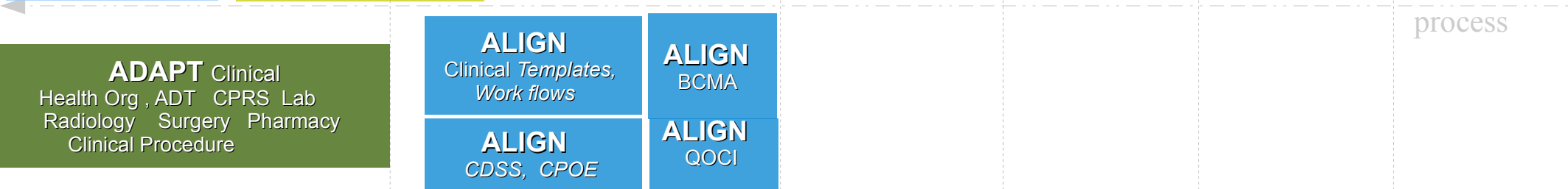
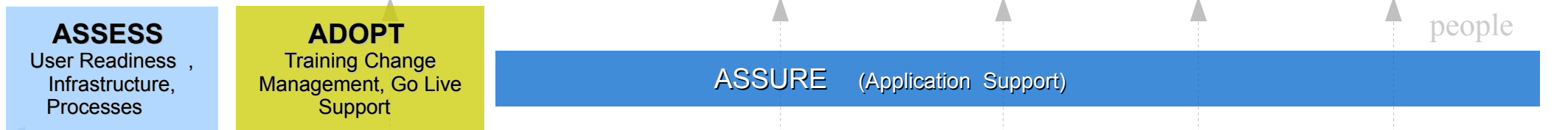
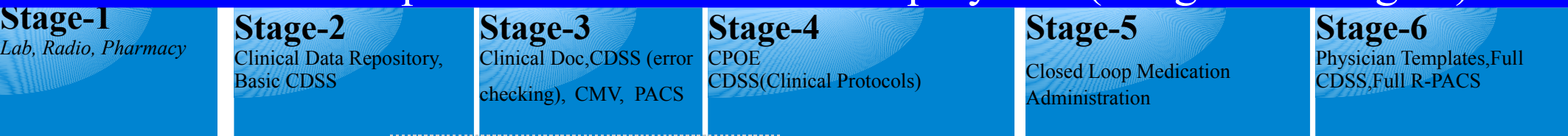




# Project Plan



# RGCI Road Map for OHUMVistA CIS Deployment( Stage 1 to Stage 6)

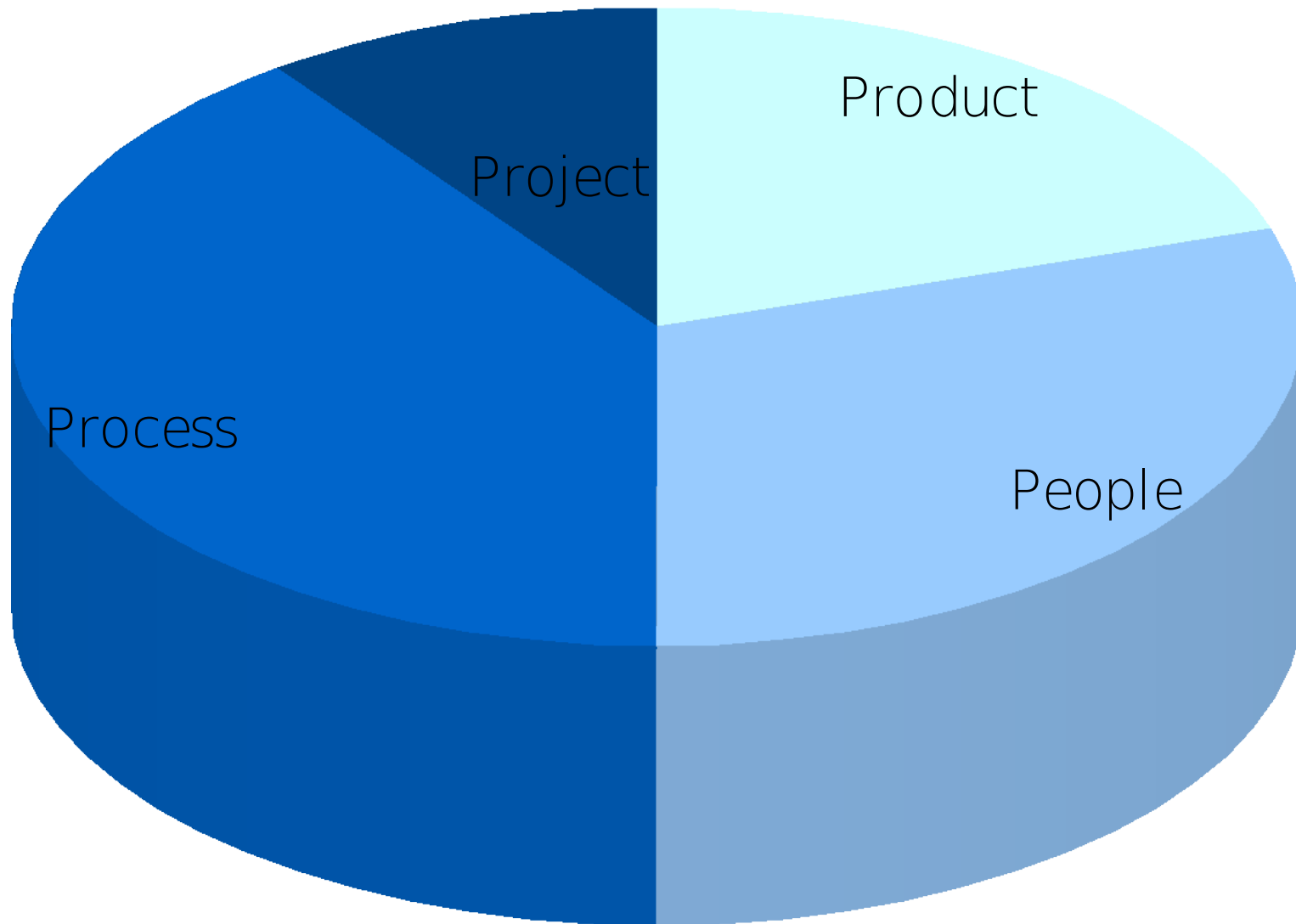


**Go Paperless, Improve productivity, Enhance brand**  
 Decrease operational costs, Improve patient care, Improve internal communication and work flows improve communication between hospital and external service providers (labs, radiology, ambulatory, pharmacy) Decrease nurses workload and increase their clinical productivity  
 Decrease wait times in OPD due to instant and complete record availability  
 Eliminate unnecessary lab orders

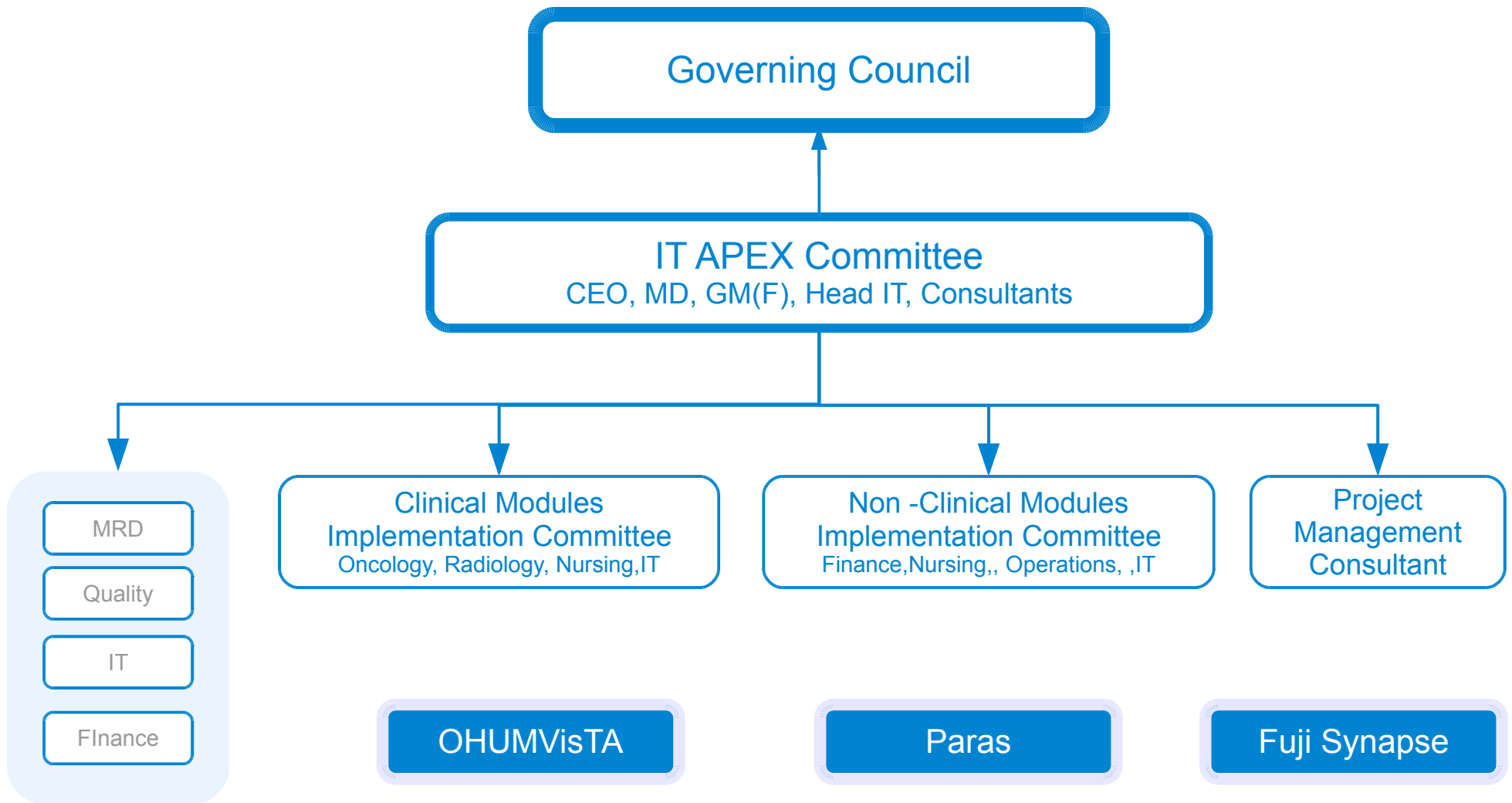
<b>Clinical Data analysis for research</b>	<b>Documented reduction in medical errors</b>	<b>Documented improvement in clinical outcomes</b>
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18 **OHUM**  
opening hearts uniting minds

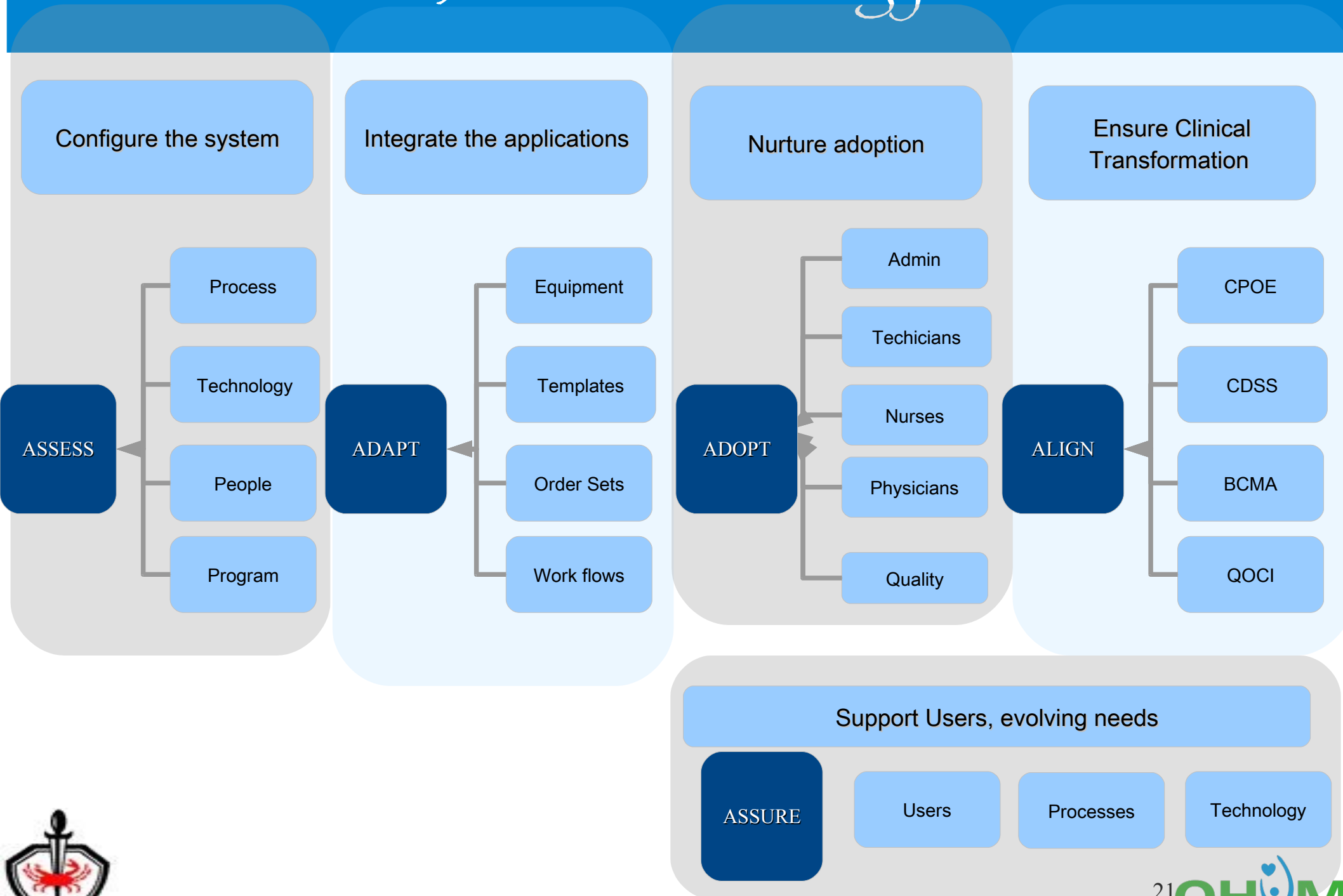
# Effort across enterprise



# Project organization



# 5A's methodology



# Project management approach

Assess 12 w  
Adapt 16 w  
Adopt 16 w  
Align 40 w  
Assure 260w

One team  
Joint authoring  
Living documents  
Go live early  
Incremental wins  
No code changes  
Adoption first, then  
transformation  
Assumed approvals  
Continuous improvements  
Measure core outcomes



ROI



# ROI Potential .....tangible

## Minimize patient/doctor/nurse wait-times

through online availability of complete patient EMR – enables potential to treat more patients

## Reduce in-patient discharge times

and thereby enable quicker bed availability & reduced admission times – enables higher bed utilization

## Reduce billing mismatches,

over-billing/refunds and manual processing time/efforts

## Reduce OP patient wait-times through streamlined workflows

involving smart-cards and/or bar-coding – enables faster patient turnaround and ability to handle higher volume of patients

## Reduce repeat investigations

ordered by doctors through immediate & timely availability of investigation reports – increases lab consumables utilization, reduces wastage of film and paper.





# Rol Potential ..... tangible

## ♦ MIS , analysis and business intelligence

Availability of electronically-stored data across the patient life-cycle ; reduced efforts in such data consolidation and reporting

## ♦ Extends the reach of the hospital;

enable patient consultations from satellite centres or through tele-consulting –and adds another revenue stream possibility.

## ♦ Enhances patient convenience;

enable patient appointments and bookings over the internet or through mobile phones – can lead to more patients with appointments, may also reduce workload on front-desk

## ♦ Enable asset information storage & tracking

– reduce losses/pilferage and optimize utilization

## ♦ Automation of roster, payroll & leave

calculations – reduced efforts in routine activities and manual data-entry



# ROI Potential .....intangible

**Higher quality of treatment provided,**  
through availability of complete & timely information at all points, through reduced errors  
and through online availability of drug-related data.

**Standardization of best practices across the hospital,** without compromising individual doctor flexibility

**Enhanced technology-driven, professional work environment** with reduced non-clinical work content for nurses and junior doctors – leading to higher levels of motivation & lower attrition

**Significantly reduce the level of paper records** generation and flows in the hospital – can lead to storage space optimization and increases contribution to ‘green’ initiatives. Significantly improve the Medical Records capability and statutory compliance of the hospital

**Provide extensive clinical information online** to facilitate & improve the Research efforts – especially for doctors to analyze and publish research findings.



The first step towards world-class oncology care

