

SECTOR PROFILE

HEALTHCARE & SMART HOSPITALS

BETTER CARE. SMARTER OPERATIONS.
CONNECTED HEALTHCARE.

WE ARCHITECT | WE INTEGRATE | WE DELIVER

SECTOR VISION

Healthcare as one connected operating environment

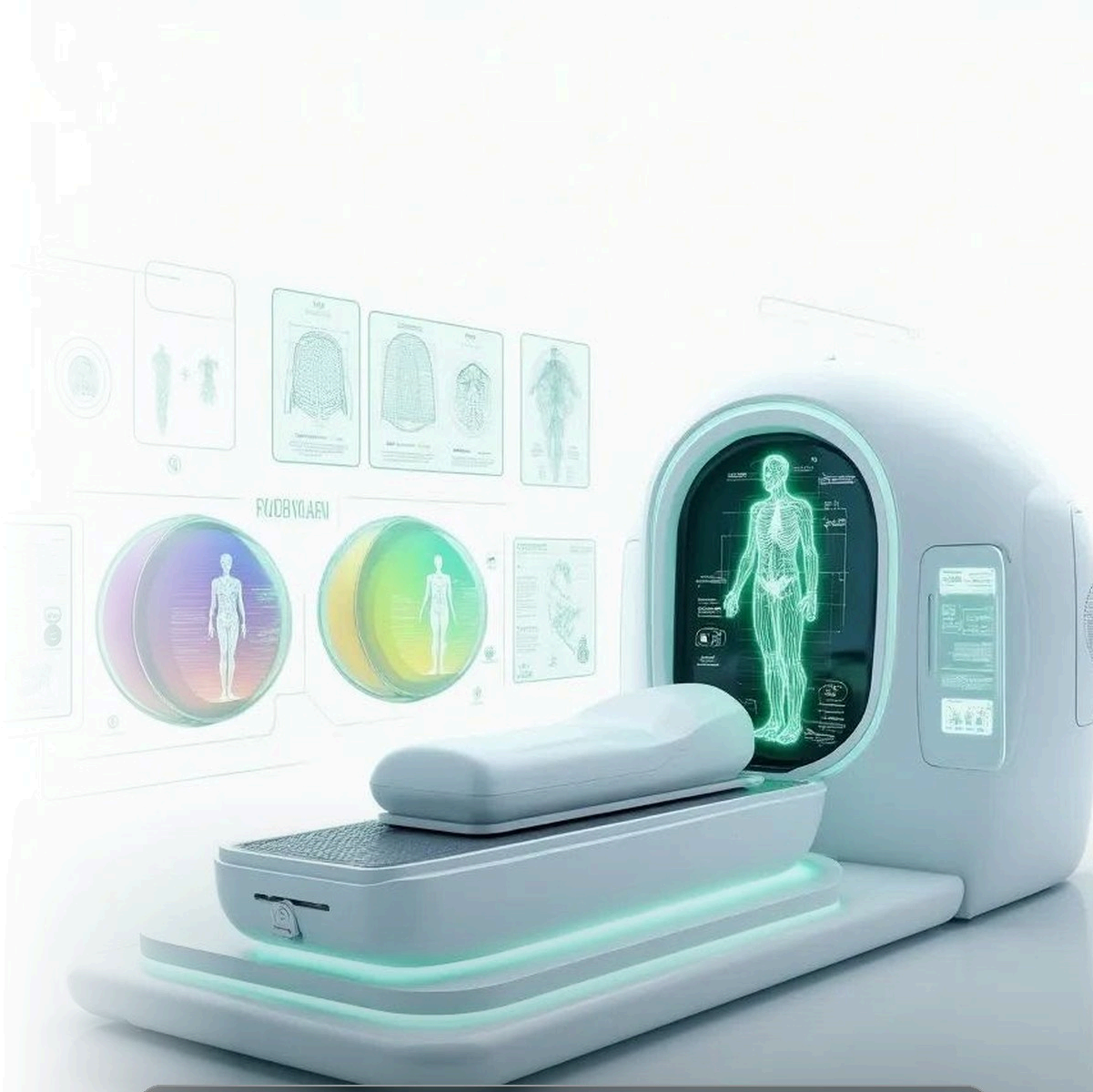
ITC develops integrated healthcare environments connecting clinical systems, patient journeys, smart facilities, data, AI, cybersecurity and hospital operations.

THE ITC VIEW

The smart hospital is not a collection of devices.

It is a coordinated clinical, digital and physical ecosystem designed around better outcomes, safer operations and a better patient experience.

ONE REQUIREMENT. ONE ARCHITECTURE.
ONE COORDINATED SOLUTION.



HEALTHCARE & SMART HOSPITALS

Clinical, digital and physical — as one.

WHY TRANSFORMATION MATTERS

Hospitals are becoming more complex—not less

Fragmented systems

Clinical, facilities, security and operational platforms often remain disconnected.

Patient pressure

Growing expectations for speed, visibility, convenience and continuity of care.

Operational strain

Beds, staff, equipment, pharmacy, theatres and facilities must work as one system.

Data overload

Large volumes of clinical and operational data are difficult to turn into timely decisions.

Cyber risk

Connected medical and operational technology expands the attack surface.

Lifecycle cost

Technology must remain supportable, interoperable and upgradeable over many years.

LEAD SOLUTION PARTNER

ITC leads the solution

ITC translates the hospital's objectives into one integrated solution framework.

01	**Develop**	Understand clinical, operational and infrastructure requirements.
02	**Architect**	Define the integrated solution architecture and interfaces.
03	**Integrate**	Coordinate specialist technologies within one framework.
04	**Deliver**	Manage implementation, testing, commissioning and handover.
05	**Evolve**	Support optimization, expansion and future technology adoption.



HEALTHCARE & SMART HOSPITALS

One partner. Every system connected.

OPERATING MODEL

Develop → Architect → Integrate → Deliver → Evolve

One repeatable ITC methodology across the project lifecycle.

01

DEVELOP

Requirement & outcomes

→

02

ARCHITECT

Solution & interfaces

→

03

INTEGRATE

Systems & partners

→

04

DELIVER

Implement & commission

→

05

EVOLVE

Optimize & expand

REFERENCE ARCHITECTURE

A layered smart-hospital architecture



HOSPITAL COMMAND & OPERATIONS CENTER

- Cross-domain visibility
- Coordination
- Decision support
- Incident management

PATIENT EXPERIENCE

A connected journey from access to follow-up



01
Access
Digital appointment & pre-arrival

02
Arrival
Wayfinding & registration

03
Care
Clinical workflow & diagnostics

04
Stay
Smart room & patient services

05
Discharge
Medication & instructions

06
Follow-up
Remote care & engagement

CLINICAL DIGITAL CORE

Connect clinical workflows around trusted information

HIS / EMR

Patient administration, clinical records and care workflows.

LIS / RIS / PACS

Laboratory, radiology and imaging information integration.

CPOE & eMAR

Digital orders, medication administration and workflow control.

Interoperability

API, HL7/FHIR and integration-engine approach as required.

Clinical portals

Role-based access for clinicians, patients and authorized stakeholders.

Data governance

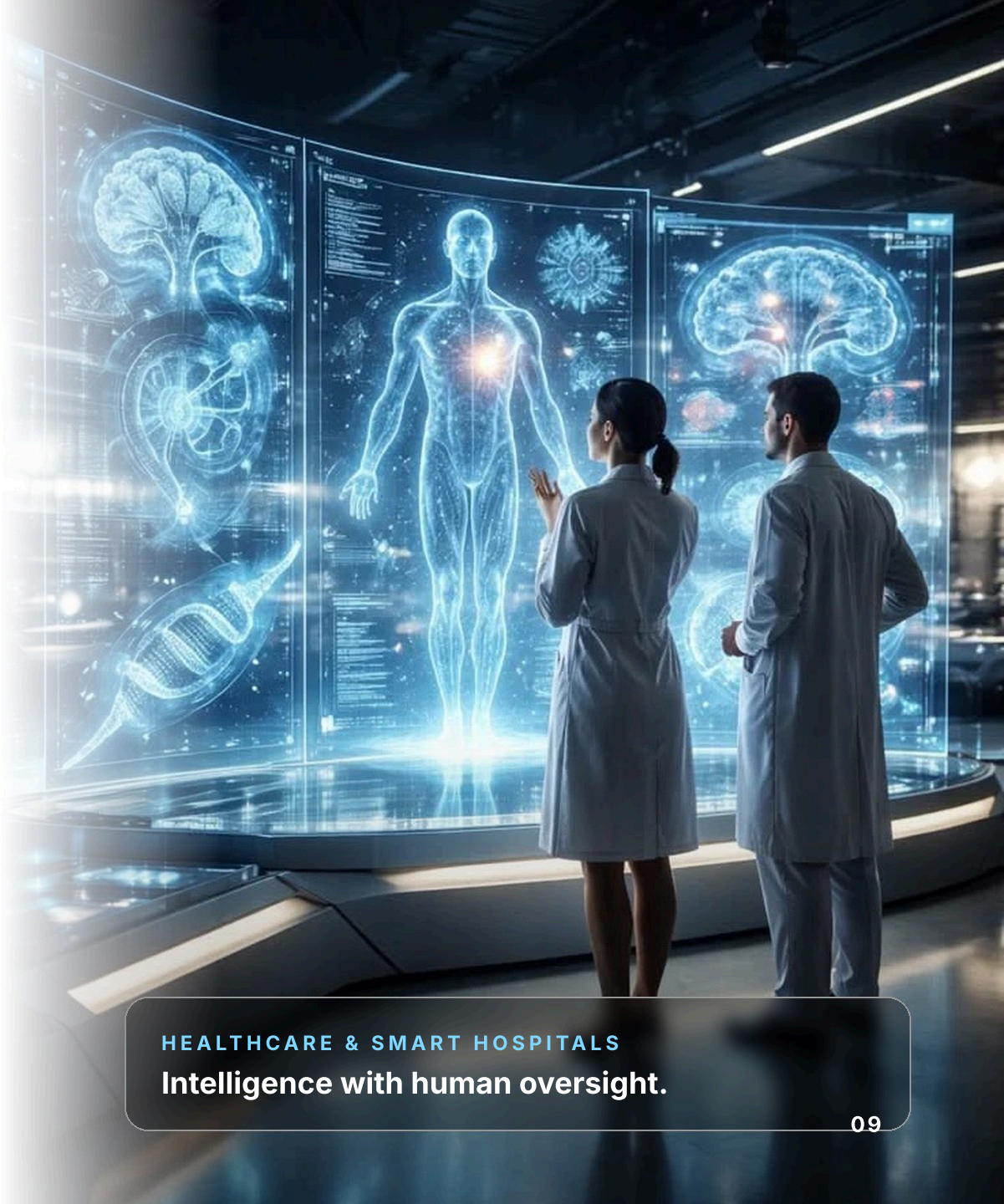
Master data, quality, lineage, permissions and auditability.

AI & DECISION INTELLIGENCE

Apply AI where it improves real hospital operations

- AI-assisted clinical decision support through qualified specialist technologies
- Predictive bed demand, patient flow and capacity planning
- Imaging workflow prioritization and intelligent reporting support
- Operational anomaly detection across facilities and critical assets
- Natural-language access to authorized hospital knowledge and data
- Executive analytics for quality, utilization, cost and service performance

AI must operate within approved clinical governance, privacy, cybersecurity and human-oversight requirements.



HEALTHCARE & SMART HOSPITALS

Intelligence with human oversight.

HOSPITAL COMMAND CENTER

From fragmented dashboards to coordinated operations



A unified operational view can bring together:

- Patient flow, beds and capacity
- Emergency and critical events
- Facilities and engineering alarms
- Security and access control
- Asset and equipment status
- Service-level and workforce indicators
- Energy and utility performance
- Executive operational KPIs

SMART WARDS & ROOMS

Technology that supports patients and clinical teams

- Bedside clinical access and patient information
- Nurse call and workflow integration
- Smart room controls and patient comfort
- Connected vital-sign and approved medical devices
- Patient infotainment and education
- Fall-risk, safety and escalation workflows where approved
- Environmental monitoring and infection-control support



HEALTHCARE & SMART HOSPITALS

Rooms designed around the patient.

RTLS & ASSET INTELLIGENCE

Know where critical assets are—and how they are used

Medical assets

Locate mobile equipment and reduce search time.

People flow

Support authorized staff/patient flow use cases.

Utilization

Understand equipment availability and usage patterns.

Maintenance

Connect asset status with service and maintenance workflows.

Safety

Support duress, restricted-area and escalation scenarios where approved.

Analytics

Turn location events into operational performance insight.

SMART PHARMACY

Safer medication workflows with better visibility



- Pharmacy information and inventory integration
- Automated storage/dispensing where appropriate
- Barcode/RFID medication verification
- Cold-chain and controlled-storage monitoring
- Ward-level medication workflow integration
- Stock optimization and expiry visibility
- Traceability and audit support

DIAGNOSTICS & IMAGING

Connect high-value diagnostic environments

Enterprise imaging

RIS/PACS and enterprise imaging integration.

Workflow orchestration

Imaging workflow orchestration.

Modality connectivity

Modality connectivity and secure network design.

AI-assisted imaging

AI-assisted imaging workflows through specialist technologies.

Remote reading

Remote reading and authorized collaboration.

Lifecycle

Performance monitoring and lifecycle planning.

VIRTUAL CARE

Extend the hospital beyond its physical walls



- Secure teleconsultation and follow-up
- Remote specialist access
- Remote patient monitoring integration
- Digital care pathways and patient engagement
- Consent, identity and access controls
- Integration with the clinical record where required

SMART FACILITIES

Integrate the digital hospital with the physical hospital

BMS

HVAC, plant, environmental conditions and alarms.

Energy

Metering, optimization and sustainability performance.

Lighting

Efficient, controllable and context-aware lighting.

Vertical transport

Lift/escalator monitoring and operational integration.

Critical systems

UPS, generators, medical gases and critical plant visibility.

Maintenance

Condition monitoring, work orders and asset lifecycle.

SAFETY & SECURITY

Protect patients, staff, assets and operations

Access control

Role-based access and restricted-area management.

Video management

Integrated security operations and incident review.

Infant / asset protection

Specialized protection workflows where required.

Emergency systems

Fire, life-safety and emergency coordination interfaces.

Visitor management

Controlled, auditable visitor workflows.

Security operations

Integrated alarms, procedures and escalation.

CYBERSECURITY & DIGITAL RESILIENCE

Security must be designed into the hospital architecture

- Identity and access management
- Network segmentation and zero-trust principles
- Medical/IoT/OT device security
- SOC/SIEM integration and incident response
- Backup, disaster recovery and business continuity
- Encryption, logging and privileged-access controls
- Vulnerability and lifecycle management



HEALTHCARE & SMART HOSPITALS

Every connected device, secured.

DIGITAL INFRASTRUCTURE

A resilient foundation for connected healthcare



- Campus and clinical network architecture
- Wi-Fi and mobility infrastructure
- Edge computing for critical workloads
- Private cloud / data-center integration where required
- High availability and redundancy
- Time synchronization and monitoring
- Structured cabling and technical rooms

INTEGRATION FRAMEWORK

Connect systems without creating another silo

Clinical	HIS • EMR • LIS • RIS • PACS	→	ITC INTEGRATION FRAMEWORK
Operational	BMS • CMMS • RTLS • Pharmacy	→	ITC INTEGRATION FRAMEWORK
Safety	Access • CCTV • Fire • Emergency	→	ITC INTEGRATION FRAMEWORK
Digital	Data • AI • Analytics • Portals	→	ITC INTEGRATION FRAMEWORK
Infrastructure	Network • Edge • Cloud • Data Center	→	ITC INTEGRATION FRAMEWORK

INTEROPERABILITY

Design interfaces deliberately

Architecture first

Define system boundaries, responsibilities and interfaces before procurement.

Standards-aware

Use healthcare and enterprise standards appropriate to the project and jurisdiction.

API-led

Favor controlled, documented interfaces rather than brittle point-to-point connections.

Data ownership

Clarify stewardship, retention, permissions and sovereignty.

Testing

Interface testing, integration testing and end-to-end scenario validation.

Change control

Manage upgrades and future additions without destabilizing the ecosystem.

DELIVERY FRAMEWORK

From concept to operational readiness

01

Discovery

Requirements, stakeholders, baseline

02

Architecture

Concept, interfaces, standards

03

Design

Detailed design & procurement packages

04

Integration

Configuration, interfaces, testing

05

Commission

SAT, training, readiness, handover

06

Evolve

Support, optimization, expansion

PROGRAM GOVERNANCE

One coordinated project framework

Client governance

Objectives, approvals, clinical and operational ownership.

ITC leadership

Architecture, integration framework, coordination and delivery management.

Technology specialists

Domain systems, engineering and specialist implementation.

Local delivery

Installation, logistics, support and regulatory coordination.

QA/QC

Design reviews, inspections, testing and acceptance control.

Documentation

Design basis, interfaces, test records, training and handover.

DELIVERY ECOSYSTEM

Global technology. Local delivery.



PRIORITY USE CASES

Start with outcomes, not technology

Patient flow
Reduce waiting, bottlenecks and avoidable delays.

Bed management
Improve visibility of capacity and turnover.

Asset visibility
Reduce search time and improve utilization.

Command center
Coordinate hospital-wide operational decisions.

Predictive maintenance
Reduce disruption from critical equipment/facilities.

Energy performance
Track and optimize utility consumption.

Virtual care
Extend access and specialist reach.

Cyber resilience
Protect continuity of clinical operations.

Executive intelligence
Turn operational data into management action.

OUTCOME FRAMEWORK

Measure what matters

Patient

Wait time • journey visibility • satisfaction

Clinical

Turnaround • safety • workflow adherence

Operational

Bed turnover • asset utilization • response time

Facilities

Availability • alarms • maintenance • energy

Digital

System uptime • interface health • data quality

Security

Incident response • access control • resilience

IMPLEMENTATION ROADMAP

Build the hospital in controlled stages



0–3 MONTHS	3–6 MONTHS	6–12 MONTHS	12–18 MONTHS	ONGOING
Discover	**Design**	**Build**	**Commission**	**Evolve**
Requirements, architecture, priorities	Detailed design, interfaces, procurement	Infrastructure, platforms, integrations	Testing, training, phased activation	Optimization, analytics, new use cases

Indicative sequencing only; actual program depends on project scope, procurement model and hospital readiness.

EXPERIENCE BEHIND THE SOLUTION

Present project evidence transparently

ITC PROJECT

Use this label only for projects where ITC had a direct contracted role.

Scope • country • client type • ITC role • year • measurable outcome

TECHNOLOGY ECOSYSTEM REFERENCE

Use this label for relevant references delivered by specialist technology partners.

Clearly attribute the reference and never present it as an ITC-owned project.

WHY ITC

A solution-led approach to complex healthcare environments

One Lead Solution Partner

A single coordinated framework across multiple technology domains.

Architecture Before Products

Requirements and integration logic before vendor selection.

Technology-Independent

Best-fit specialist technologies selected for the project.

Integrated by Design

Clinical, operational, physical and digital systems considered together.

Global + Local

International technology capability with local delivery structures.

Built to Evolve

Architecture designed for future expansion and technology change.



LET'S TALK

DISCUSS YOUR HEALTHCARE PROJECT WITH ITC

WE ARCHITECT.
WE INTEGRATE.
WE DELIVER.

From initial requirement to architecture, integration, delivery and future evolution.