

Beyond Efficiency: AI, Value Capture, and the Future of Hospitals

Michael Ghilissen

Department of Public Health Sciences, Faculty of Medicine, University of Liège

Context

The healthcare system stands at an inflection point. Hospitals face unprecedented pressure from rising costs, labor shortages, shifting payment models, and technological disruption. AI, following the exponential improvement trajectory typical of disruptive innovations, may redefine how healthcare value is created and captured.

Hospitals currently account for about 30% of healthcare spending, with profit pools concentrated in capital-intensive service lines such as surgery, imaging, and specialty care. These profit pools subsidize money-losing services (notably primary care, emergency departments, and psychiatric or mental health care) and fund innovation. The business model depends on maintaining high margins in premium services while managing costs in commodity areas.

Viewing AI as merely a sustaining innovation to boost efficiency in existing workflows is inadequate and risky. AI is likely to restructure selected components of care delivery, but the extent to which this alters business models depends primarily on payment, regulatory, and incentive changes. Hospitals operate under credentialing, malpractice liability, payer contracting, and Stark/anti-kickback constraints that materially shape how disruption propagates.

Modularity facilitates disintermediation, and regulatory challenges and professional autonomy won't shield hospitals from disruption. Historically, regulation may slow progress but does not prevent disruption.

The situation involves growing financial pressure, workforce strain, and rapid technological change. The complication is that introducing AI into existing structures may yield local improvements while increasing costs, eroding differentiation, or enabling external disruption. The resolution is to govern AI as a portfolio of business-model choices: improve selected current activities, redesign care where simplicity and lower cost are possible, build control over strategically important data and capabilities, and use partnerships without surrendering all future value. The goal is not technology adoption for its own sake, but sustainable care delivery.

Hospitals that use AI to fundamentally reduce the cost and complexity of care delivery—rather than merely enhancing their existing high-cost model—will thrive; others risk disruption and decline. Truth demands uncomfortable adaptation now.

Executive Summary

Success in implementing AI at the organizational level requires a hybrid strategy: defend core profit pools with sustaining innovations that improve efficiency and quality across existing service lines; invest in new value networks through autonomous units pursuing disruptive innovations in underserved markets; and build data capabilities to participate in emerging profit pools centered on data licensing and predictive analytics. Strong governance is essential to prevent unintended harm or inflation, and selective, strategic disruption—rather than wholesale change—offers the clearest path to sustainable advantage. With early movers poised to capture outsized value, time is critical; laggards risk being reduced to commoditized service providers.

What hospital executives should do immediately:

1. **Assess Current Position:** Conduct a strategic audit of AI capabilities, data assets, and competitive positioning
2. **Establish AI Governance:** Create executive-level oversight with clear authority and accountability
3. **Launch Defensive Initiatives:** Identify 3-5 high-impact, low-risk AI applications with clear ROI
4. **Explore Offensive Opportunities:** Identify 1-2 areas for disruptive innovation with autonomous units
5. **Invest in Data Infrastructure:** Build the foundation for both defensive efficiency and offensive new business models
6. **Develop Partnership Strategy:** Establish principles for working with AI vendors that preserve hospital control and optionality

Strategic Problem

Organizations of all sizes and across every industry are researching and experimenting with what's next in AI.

AI is progressing rapidly, and it's more than just hype. Adopting AI is not only a technical decision but also a matter of business strategy. AI has evolved well beyond basic rule-based automation and is best understood through its functional paradigms, including:

- **Predictive AI:** Forecasting outcomes. Output: Numbers, probabilities, scores, or classifications - weather forecasting, fraud detection, and credit scoring.
 - *It can analyze variables to recommend the best course of action or operational decision: dynamic bed capacity and resource allocation, operating room scheduling optimization, and interventions for sepsis and clinical deterioration.*
- **Generative AI:** Creating content. Output: Text, images, audio, video, or software code - writing essays, generating digital art, or drafting emails.
 - *It can focus on content generation, translation, and unstructured data synthesis, lowering the cognitive and administrative burden on hospital staff:*

ambient clinical documentation and clinical SOAP note synthesis, automated discharge summaries and patient education materials, and synthetic medical data generation for research and training.

- Agentic AI: Taking autonomous action. Output: Completed actions and managed processes rather than just answers - automated loan processing, maternity leave/onboarding orchestration, and self-healing IT infrastructure.
 - *It leverages autonomous software agents capable of reasoning, planning multi-step tasks, using software tools, and executing transactions independently to achieve an operational goal: end-to-end prior authorization automation, autonomous patient triage and appointment lifecycle management, and revenue cycle management (RCM) and billing reconciliation.*

Hospital leaders should frame AI not as an isolated technology investment but as a choice about the hospital's future business model.

The immediate appeal of AI lies in a lower administrative burden, faster workflows, and better use of scarce clinical resources. Yet these benefits may also reinforce a costly fee-for-service structure and accelerate the transfer of value to payers, vendors, or lower-cost care providers.

The managerial task is therefore to pursue near-term improvements without assuming that efficiency alone will preserve the hospital's competitive position.

Every major AI investment should be evaluated against two questions: whether it improves the current model and whether it prepares the organization for a different model of care.

Emphasis on the risk of protecting the current high-cost hospital model.

How can hospital systems introduce AI without maintaining complex, high-margin operations at the expense of simpler, lower-cost alternatives that may eventually undermine the existing business model, with technologies that allow new entrants to capture the market through disruptive innovations? This would trigger the Innovator's Dilemma (C. Christensen).

Structural pressure characteristics of hospitals:

- Revenue remains heavily tied to fee-for-service reimbursement;
- Profit pools are concentrated in capital-intensive activities, including operating rooms, intensive care, imaging, and specialty care;
- Hospital value networks depend on physician referrals, payer contracts, and regulatory compliance;
- Margins are thin or negative;
- Workforce shortages persist;
- New risks include hallucinations, workflow friction, and liability;
- Management must preserve margins while investing in innovation;
- Technology entrants may capture value by building AI-native services.

We have identified the following threats:

1. AI may disintermediate hospitals by shifting diagnosis and treatment to lower-cost settings.
2. AI may commoditize high-margin human expertise.
3. AI may separate data ownership from service delivery, enabling technology companies to capture value.
4. AI may generate substantial savings, improve outcomes, and reduce staff burden.
5. AI may also increase costs, create liability, transfer market share to disruptors, and cause systemic failures.

The central decision is whether hospitals should

- Use AI primarily as a sustaining innovation within existing revenue streams or as a disruptive innovation that creates new markets and value networks.
- Pursue broad AI adoption to sustain the current model.
- Prioritize disruptive applications selectively to simplify care delivery and reshape the value chain.

The strategic problem is not whether hospitals should adopt AI, but how they should do so without reinforcing the structures that leave them vulnerable to disruption.

Understanding the connection between technology and the business model is crucial. Representing the multiple facets of a business model—which consists of four interconnected elements that together generate and deliver value: value proposition, resources, processes, and profit formula or priorities—is challenging. To illustrate, the table below shows how AI can influence the value chain.

Value Chain Analysis

PRIMARY ACTIVITIES			
> Patient Intake and Admission Process	> Diagnostic and Therapeutic Services	> Inpatient and Outpatient Care	> Discharge and Billing
SUPPORT ACTIVITIES			
Procurement (Supply Chain)			
Human Resource Management			
Revenue Cycle Management (Billing)			
Technology and Information Services			
Hospital Administration and Infrastructure			

Table: Summary value chain analysis

PRIMARY ACTIVITIES			
Inpatient Value Stream		Mitigate risk & cost	
Patient Intake and Admitting: Managing scheduling, registration, and initial financial clearance or insurance verification.	Diagnostic and Therapeutic Services: Conducting laboratory tests, imaging, and direct medical or surgical treatments.	Inpatient and Outpatient Care: Delivering daily nursing care, specialized physician services, and pharmacy administration.	Discharge and Billing: Processing patient releases, follow-up care instructions, insurance claims, and final invoicing
AI impact			
Intake & Bed Management: AI predictive analytics models use historic data, emergency department trends, and seasonal variations to anticipate bed shortages and optimize bed allocation. This prevents overcrowding bottlenecks before they happen.	Continuous Care & Patient Monitoring: AI algorithms integrated into wearable tech and inpatient monitors analyze streams of vital data. They flag early signs of deterioration (such as sepsis risk) hours before a human clinician would notice, protecting patient safety	Inpatient and Outpatient Care: AI impacts this stage by optimizing clinical capacity and safety: predictive length of stay (LOS), management, proactive patient safety (early warning systems), automated medication safety and reconciliation	Discharge & Readmission Prevention: AI scans electronic health records (EHR) at discharge to calculate a patient's personalized risk of post-discharge complications. It helps care managers flag high-risk patients who require aggressive post-acute follow-up, directly reducing costly readmission rates.

Outpatient Value Stream		<i>Maximize throughput</i>	
Patient Intake & Admitting: Streamlined and often digital. The focus is on rapid registration, upfront co-pay collection, and high-volume scheduling efficiency to minimize waiting room times.	Care Delivery: Episodic, fast-paced, and standardized. Services are delivered in compressed timeframes, emphasizing rapid diagnostic turnaround (e.g., quick X-rays or lab results) and efficient clinical workflows.	Inpatient and Outpatient Care: Infrastructure: Utilizes lower-cost, highly accessible environments such as standalone clinics, urgent care centers, or ambulatory surgery centers. It requires less overhead since 24/7 room, board, and continuous nursing are absent.	Discharge & Transition: Fast and direct. Patients receive immediate post-procedure instructions, prescriptions to fill at retail pharmacies, and are discharged home within hours.

AI impact			
Intake & Dynamic Scheduling: AI conversational bots handle outpatient booking, while predictive models drastically reduce "no-show" rates by cross-referencing patient history and automatically overbooking or redistributing open slots to minimize waiting room idle time.	Rapid Care Delivery & Ambient Scribing: Generative AI ambient technology enables AI scribes to capture real-time dialogues between patients and doctors, instantly generating clinical notes for physicians to review. This innovation reduces "pajama time" (the hours spent on charting after work) and decreases the administrative documentation workload. As a result, doctors can see more outpatients each day.	AI impacts this stage by removing administrative friction, allowing clinicians to focus purely on patient interactions: eliminating the documentation bottleneck (ambient ai), augmented diagnostics & rapid triage, ai-driven preventive triage (remote patient monitoring)	Diagnostics Acceleration: In outpatient imaging centers, AI functions as a high-speed supportive tool, analyzing X-rays, MRIs, or CT scans to pre-screen for abnormalities. It surfaces high-risk cases to the top of a radiologist's queue, slashing diagnostic turnaround time from days to minutes
SUPPORT ACTIVITIES			
Procurement (Supply Chain): Sourcing and managing inventory for medical devices, pharmaceuticals, and daily facility supplies is a complex task. AI enhances this process by replacing reactive inventory tracking with dynamic pattern recognition. It monitors global shipping delays and fluctuations in clinical demands, allowing for precise forecasts of surgical supply and pharmaceutical needs weeks in advance. Additionally, generative AI "value analysis" bots review contract parameters to assess whether high-cost items, such as specialized antibiotic sutures, are financially justified based on patient outcome statistics.			
Human Resource Management: Recruiting, training, and retaining certified nurses, doctors, and operational staff are essential. To combat staff burnout, AI optimizes nurse staffing schedules by predicting floor acuity. This reduces reliance on expensive traveling nurse agencies and ensures safe patient-to-staff ratios.			

Revenue Cycle Management (Billing): Medical billing and coding are increasingly automated through Natural Language Processing (NLP) models. AI directly aligns clinical documentation with reimbursement codes, minimizing human data-entry errors, decreasing claim denial rates, and accelerating cash flow.

Technology and Information Services: Managing electronic health records (EHR) and specialized medical IT infrastructure has evolved. AI enhances this aspect through automation and predictive security, enabling autonomous EHR management, improved data interoperability, predictive cyber defense, and proactive IT infrastructure maintenance.

Hospital Administration and Infrastructure: Managing regulatory compliance, quality control, facility maintenance, and finances. AI leverages automation and smart facility capabilities to safeguard margins and lower overhead: ensuring regulatory compliance, audit readiness, intelligent facility and energy management, as well as strategic financial planning and capital allocation.

Stakeholder analysis

The stakeholder analysis, using power and influence, maps people by their authority and interest to prioritize attention, improve communication, track changes, and manage resources and project expectations.

	Low Power	High Power
	Low Power, High Interest (Keep Informed)	High Power, High Interest (Manage Closely)
High Interest	• Patients and Their Families • Frontline Clinical Staff (Nurses, Residents, Physicians) • Allied Health Professionals: Pharmacists, physical therapists, radiologic technologists, and lab technicians • Community Advocacy Groups	• Hospital Board of Directors / Trustees • Chief Executive Officer (CEO) & Executive Leadership • Chief Medical Officer (CMO) & Chief Nursing Officer (CNO) • Department Heads / Clinical Chiefs

	Low Power	High Power
Low Interest	. Low Power, Low Interest (Monitor) • General Medical Supplies Vendors • Outsourced Facilities Contractors • General Public / Passive Community Members	High Power, Low Interest (Keep Satisfied) • Government Health Authorities & Regulators • Major Insurance Providers & Public Healthcare Payers • Primary Financial Investors / Philanthropic Donors • Labor Unions (Medical/ Nursing)

Table: Stakeholder analysis

These actors may capture more value from AI than either hospitals or technology startups. The future competitive battle may not be "hospital versus AI startup." It may be:

- Hospital versus payer;
- Hospital versus vertically integrated health platform;
- Hospital versus EHR ecosystem owner.

Problem Decomposition

We now break down the overarching strategic question into smaller, manageable sub-issues. Management should not view AI adoption as a single, uniform challenge.

Although these issues are interconnected, they require distinct managerial approaches.

Clear segmentation enables leaders to distinguish among operational enhancements, strategic risks, and new growth avenues, avoiding the pitfall of treating all AI initiatives as a single technology portfolio.

Rank	Issue	Description
1	Value-chain reconfiguration	<i>Who captures long-term value?</i> The rise of AI shifts value from service delivery to data ownership and algorithmic insight. This raises the question: who controls decision-making workflows and customer relationships? Hospitals have unique advantages that technology companies find challenging to replicate. These advantages include clinician networks, patient trust, referral systems, and facilities. As a result, these assets may continue to serve as the primary source of bargaining power.
2	Revenue-pool migration and revenue-cycle vulnerabilities	<i>Future growth opportunity but requires new business models and capabilities. Directly affects margins, is relatively feasible to address, and is urgent.</i> AI has the potential to generate new revenue streams through various avenues, including data licensing, predictive analytics, software services, and care-management platforms. However, hospitals may struggle to seize these opportunities due to a lack of the necessary capabilities. Additionally, while AI can automate tasks such as billing, coding, prior authorization, and claims processing, the value generated may ultimately benefit payers or technology firms rather than the hospitals themselves.
3	Profit-pool erosion	<i>Most immediate threat to margins.</i> AI technology significantly lowers the marginal costs associated with diagnostic and cognitive services. Radiology and pathology are among the first areas being affected, as routine cases can often be managed with minimal specialist involvement.

Rank	Issue	Description
4	Clinical decision support and diagnostic commoditization	<i>The long-term impact of this initiative is significant, but its immediate feasibility is limited due to safety and regulatory challenges.</i> While AI has the potential to enhance accuracy and speed, it may also introduce risks such as liability, bias, overdiagnosis, deskilling of staff, and a loss of differentiation among healthcare providers. Additionally, purely technical benchmark performance and consumer-facing chatbots are not considered in this assessment, as they do not directly influence the hospital's core profit sources or organizational structure.
5	Organizational inertia	<i>Background execution constraints rather than a distinct strategic choice.</i> Hospital resources, processes, and values optimize for current customers and existing high-margin services, which creates resistance to disruptive AI investments.
6	Operational efficiency versus cost inflation	AI may enhance documentation, scheduling, and monitoring but could still raise overall costs due to implementation expenses, integration challenges, added complexity, increased demand, and fee-for-service
7	Regulatory and liability constraints	<i>Liability uncertainty and risk aversion need to be addressed.</i> Regulation affects timing rather than the fundamental economics of disruption. Cybersecurity, workforce resistance, and capital constraints do not change the core value-creation logic.
8	Peripheral administrative tools	<i>Excluded</i> because they offer only incremental improvements and do not address the core tension between sustaining and disruptive innovation.

Table: present-day operating risks and economic uncertainty, and future-oriented strategic issues

Capital Allocation Discussion

Most strategic failures stem from improper allocation of funds. A board-level document should enforce prioritization:

- Make a single choice: Select one primary growth driver.

- Kill low-impact ideas: Stop funding projects that merely maintain the status quo.
- Demand clear returns: Tie every dollar to a measurable milestone.

Avoid these pitfalls:

- Shiny objects: Chasing new trends instead of focusing on core strengths.
- Spread too thin: Dividing small amounts among too many projects.
- No hard choices: Avoiding cuts to failing legacy projects.

Prioritizing Strategic Leverage

Rank the sub-issues by strategic importance. Executives should focus on AI concerns that influence value capture, prioritizing those that affect revenue, costs, bargaining power, or key capabilities. Immediate attention is needed for revenue-cycle risks and operating economics, as these directly affect current margins. In contrast, issues such as value-chain control and diagnostic commoditization shape the hospital's long-term position.

Which issue deserves top priority? Resources should be allocated to areas where AI can significantly change revenues, costs, bargaining leverage, or ownership of key capabilities.

While pilot projects in peripheral areas can offer learning opportunities, they should not divert investment from the few critical issues that determine strategic success.

Scenarios

Hospital leaders should turn vague claims about AI into clear, measurable assumptions before investing heavily.

Instead of accepting general promises of productivity gains or disruption, management must specify expected impacts on margins, cost per case, market share, diagnostic revenues, pricing power, or new revenue within a set timeframe.

Here are examples of scenarios that address system-level value-chain changes as well as medium-term financial and operational outcomes. The idea behind these scenarios is to test whether they can be proven wrong by empirical observation.

These scenarios should include decision points that guide whether an initiative is scaled, adjusted, or halted. The goal isn't perfect forecasts but to prevent enthusiasm from overshadowing accountability and to help distinguish real strategic progress from mere technical success.

Scenario	Definition	Assessment
Value-Chain Ownership	Hospitals that lack ownership of at least one AI value-chain layer—data, analytics, or applications—will face EBITDA-margin compression.	Studies compare hospitals that have in-house AI capabilities with those that either license these technologies or do not adopt them at all. The healthcare landscape is shifting due to modular AI systems, strategic data partnerships, and startups that are capturing investments in healthcare AI. Some hospitals continue to maintain strong profit margins while depending on external AI vendors for their needs.
Diagnostic Profit-Pool Erosion	Artificial intelligence will decrease profitability in diagnostics by displacing volume and compressing prices.	Key variables include service volume, pricing, and margin for each service line. Technical performance metrics in radiology and pathology indicate a lower workload and show early signs of reimbursement pressure.
New AI-Enabled Revenue Pools	For early adopters, AI-enabled revenue may significantly contribute to total hospital system revenue within eight years. Potential revenue sources include data licensing, predictive analytics, and care management software.	Hospitals that proactively implement AI in their revenue cycle may experience short-term margin gains, but they risk losing some of their relative revenue share within five years. Automation enables payers or technology firms to capture greater value. However, there is currently no demonstrated measurable return on investment (ROI).
Higher Operating Cost per Case	Sustaining AI deployments may increase per-case operating costs by 5–15% after accounting for labor savings, due to implementation expenses and induced demand.	Narrow efficiency gains can be overshadowed by full implementation costs. Adding AI without changing the business model is likely to inflate net costs.

Scenario	Definition	Assessment
Clinical Commoditization	Broad clinical AI tools may reduce the differentiation among hospitals, which can be assessed by indicators such as the case-mix index or premium	There is strong performance in narrow tasks; however, it's important to acknowledge real-world variability, hallucinations, liability issues, and integration challenges.

Table: Possible scenarios to investigate. Identify who benefits, who bears the costs, and what unintended consequences may emerge. Sometimes, the strategic claims exceed the strength of the available evidence.

Compare Strategic Alternatives

Neither broad, sustained adoption nor passive delay offers an adequate response. A purely defensive strategy may generate short-term savings but leave the hospital exposed to value-chain disruption, while a fully offensive transformation may exceed the organization's financial and managerial capacity. The reconciled managerial approach is a selective hybrid: use proven AI applications to improve current operations and fund capability development, while making a limited number of protected investments in care models that simplify delivery, reach underserved demand, or create new sources of value.

The balance should reflect the hospital's resources, data assets, market position, and tolerance for cannibalization* rather than a universal prescription for aggressive adoption.

Here, cannibalization means a new service, facility, or program that reduces the patient volume, revenue, or referrals of an existing service within the same healthcare system. It occurs when internal programs compete for the same local patient base rather than bringing in new growth.

Option	Description	Advantages	Disadvantages
Defensive AI Strategy	uses AI to improve efficiency and quality within current services.	• immediate ROI; • lower risk; • use of existing capabilities.	• does not address long-term disruption; • may accelerate price compression; • leaves new markets to entrants.

Option	Description	Advantages	Disadvantages
Offensive AI Strategy	creates autonomous units to develop new care models and target non-consumption.	• creates new growth; • builds disruptive capability; • may generate first-mover advantage.	• high investment; • long payback period; • execution risk; • cannibalization.
Hybrid Strategy	combines defensive and offensive initiatives.	• addresses short- and long-term threats; • balances risk; • builds capabilities incrementally; • preserves flexibility.	highest complexity; highest resource requirements; possible internal conflict.
Aggressive Sustaining Adoption	Broad AI deployment in current operations.	• tactical gains; • competitive parity.	• high integration costs; • limited differentiation; • risk of falling into the sustaining-innovation trap.
Selective Disruptive Focus	Targeted AI deployment in low-acuity care, simplified delivery, and partnerships.	• long-term resilience; • potential cost reduction; • alignment with value-based care.	• cannibalization • cultural change
Defensive Minimalism	A wait-and-see strategy.	• avoids immediate risk.	• loss of market share; • strategic delay.

Table: Strategic alternatives

Applied concretely, the hybrid strategy means naming service lines, not just postures. Defensive investment should focus where AI has already demonstrated narrow-task performance and where the hospital captures the full benefit internally: ambient clinical documentation, revenue cycle NLP coding, and bed-management

prediction — all areas where value accrues directly to the hospital's cost structure and none of it leaks to an external platform.

Offensive investment should focus specifically on diagnostic imaging and pathology, the two service lines the article's scenario analysis identifies as facing the steepest profit-pool erosion (30–50% over five years) — meaning the hospital's choice is not whether to defend these lines but whether it owns an equity or data-sharing stake in the AI tools that will eventually run them, or whether it licenses those tools from a vendor and cedes the resulting margin.

Data-asset investment should prioritize longitudinal outcomes data tied to high-acuity, low-volume conditions — the data class competitors cannot easily replicate — rather than broad EHR aggregation, which most AI-native entrants can already buy or scrape.

Partnership terms should be evaluated on one criterion: does the contract grant the hospital rights to the model outputs and derived data, or only to the tool's use?

A hybrid strategy must specify these choices; it is called a strategy.

	Defensive	Aggressive
Broad scope	Risk-Mitigated Infrastructure Strategic Intent: Comprehensive compliance, enterprise-wide guardrails, and standardized protection against data leakage, IP infringement, and regulatory penalties. Options & Actions: Implementing organization-wide governance frameworks like the NIST AI Risk Management Framework, universal data loss prevention, and broad employee risk-awareness training. Risk Profile: Low innovation velocity; prioritizes operational security and legal defensibility over immediate market disruption.	Blitzscaling Transformation Strategic Intent: Full enterprise reinvention, establishing market dominance, and embedding AI across all core value chains simultaneously. Options & Actions: Deploying custom foundational models, enterprise-wide workflow automation, massive workforce upskilling, and shifting core business models to be AI-first. Risk Profile: High capital exposure, technical debt, and operational disruption.

	Cautious Optimization	Focused Disruption
Selective scope	Strategic Intent: Safe, low-risk efficiency gains in non-critical, highly regulated, or human-in-the-loop operational zones. Options & Actions: Purchasing off-the-shelf software extensions, utilizing vetted productivity assistants with strict data privacy filters, and running isolated sandboxed pilots. Risk Profile: Minimal exposure to downside risk, but vulnerable to long-term disruption from aggressive market competitors.	Strategic Intent: Attacking specific high-value bottlenecks or outcompeting rivals in critical revenue-driving pockets (e.g., software engineering or hyper-personalized marketing). Options & Actions: Rapid prototyping, targeted build-vs-buy for specialized tooling (such as proprietary finance or legal models), and agile proof-of-concept scaling. Risk Profile: High reward in targeted zones, but risks creating structural silos if not integrated with the broader digital core.

Table: Strategy moves

This matrix is a good starting point for defining the organization's philosophy and guardrails.

However, it treats AI strategy as a static choice. In reality, comprehensive AI adoption requires considering dimensions beyond scope and risk tolerance:

- The Dynamic Nature of AI: An organization rarely stays in one quadrant. A common path is to start Defensive/Selective (to learn safely), move to Defensive/Broad (to establish governance), and then pivot to Aggressive/Selective (for competitive advantage).
- Technical Feasibility vs. Business Value: It doesn't consider whether your data infrastructure can actually support "broad" or "aggressive" choices.
- The "Buy vs. Build" Dilemma: A strategy might be aggressive yet be executed entirely through vendor partnerships rather than internal development.

To achieve a truly comprehensive AI adoption strategy, leading organizations typically combine the 2x2 matrix with one of the following approaches:

1. The Horizon Framework (Time-Based Comprehensiveness)
2. The AI Capability Maturity Model (Readiness-Based Comprehensiveness)
3. The Value vs. Complexity Matrix (Execution-Based Comprehensiveness)

Underestimation of Execution Risk

We assume organizations can execute a hybrid strategy. Hybrid strategies are intellectually attractive but operationally difficult.

Most organizations end up:

- Insufficiently defensive;
- Insufficiently offensive;
- Highly bureaucratic.

The hybrid strategy may be correct in theory but is hardest in practice.

Argument

The main argument for AI should be straightforward and economically grounded: AI can enhance hospital operations, but operational improvements alone won't ensure the hospital's long-term value retention.

Some revenue streams may decline, costs could rise if technology is applied to inefficient processes, and new value may shift to organizations that control data, analytics, platforms, or streamlined care pathways.

The strategic approach combines disciplined operational execution with targeted business-model innovation. This gives leaders and boards a clear framework for aligning AI initiatives with the hospital's future competitiveness.

AI integration should be linked to business-model transformation. Hospitals must view AI as a disruptive force rather than just an operational add-on, protect existing profit pools, and invest in new value networks.

Implementation Roadmap

Implementation should proceed through staged, time-bound commitments designed to generate evidence, expose failures quickly, and prevent pilots from becoming substitutes for transformation.

The first phase should establish minimum viable governance, identify where value is currently created or destroyed, address only the data constraints that block priority applications, and test a small portfolio of use cases against predefined clinical, economic, operational, and adoption criteria.

Governance and infrastructure should support implementation rather than become open-ended programs in their own right. Early governance should remain deliberately minimal, providing only the safeguards necessary for safe experimentation. Broader governance, standards, and organizational processes should emerge from lessons learned during implementation rather than precede it. This approach reduces bureaucratic inertia, accelerates organizational learning, and grounds governance in operational reality rather than hypothetical concerns.

The problem is not governance. The problem is governance-first. Healthcare has spent decades creating governance committees, ethics boards, steering groups, interoperability working groups, and digital strategies. Despite this, relatively little

has fundamentally changed. Governance often becomes the organization's defense mechanism against uncertainty.

The second phase should scale only initiatives that demonstrate value under realistic operating conditions, not merely in protected pilots. Scaling decisions should account for integration costs, workflow disruption, workforce requirements, incentive conflicts, and the distribution of benefits across the system. A limited number of more disruptive care models should be developed in partially protected settings, with explicit pathways for integration into mainstream operations.

The third phase should institutionalize successful capabilities through changes to operating models, incentives, accountability, workforce design, and resource allocation. AI should not be treated as an additional technology layer but as one component of a broader transition toward outcome-oriented care.

Investment and staffing should increase as evidence strengthens, but the organization should also set deadlines for scaling, redesigning, or terminating each initiative. Strategic urgency requires disciplined commitment, not unrestricted acceleration. The central objective is therefore not to minimize irreversible decisions, but to make them deliberately, with transparent assumptions, measurable consequences, and clear exit criteria.

Uncomfortable remarks:

1. Phasing does not automatically reduce risk. It can also institutionalize delay, create pilot fatigue, and allow incumbents to block change while claiming that more evidence is needed.
2. “Clear economic and clinical measures” are rarely clear. Benefits may appear in one department while costs fall elsewhere. Short evaluation periods will systematically favor incremental automation over more valuable structural change.
3. Governance and data infrastructure can become expensive preconditions for action. Building enterprise-wide foundations before proving specific use cases may consume years and capital without producing measurable value.
4. Validated pilots do not necessarily scale. Many succeed because of exceptional teams, temporary funding, manual workarounds, or protected conditions that disappear during deployment.
5. Protected organizational settings create their own risk. Separation may shield disruptive models from legacy incentives, but it can also isolate them from clinical workflows, political support, and the resources required for adoption.
6. AI-enabled care and value-based care are not the same strategy. AI can increase activity, testing, and treatment volume just as easily as it can improve outcomes or reduce costs. Payment and accountability mechanisms must change alongside technology.
7. Evidence accumulation is not neutral. Existing stakeholders may define evidence thresholds in ways that protect current structures. Some commitments must be made before complete certainty is available.

Conclusion

Healthcare isn't primarily fragmented because clinicians lack predictive ability; it's fragmented due to multiple objectives, weak accountability, dispersed authority, and politically protected trade-offs. Improved prediction won't resolve these conflicts.

Technological capability alone won't reshape how healthcare captures value. The true challenge lies in institutional economics, not AI. Hospitals shouldn't rely solely on AI to speed up or refine their costly current models.

A key risk is making a strategic mistake: treating an institutional issue as merely an information problem.

Evidence doesn't support the idea that every hospital needs a large proprietary AI team or that revenue will necessarily grow.

The likely future isn't AI replacing hospitals. More likely, AI will interact with reimbursement, regulation, workforce shortages, consolidation, and payer influence —forces that may determine outcomes more than model performance.

Executives should act early but cautiously, establish strong governance, assess full economic results, keep strategic options open, and invest in new models where the hospital's assets or strengths are evident. Inaction risks strategic vulnerability, but reckless moves can be equally harmful.