"AI-Friendly" to "AI-Forward"— Evolving Mindsets in Healthcare Delivery

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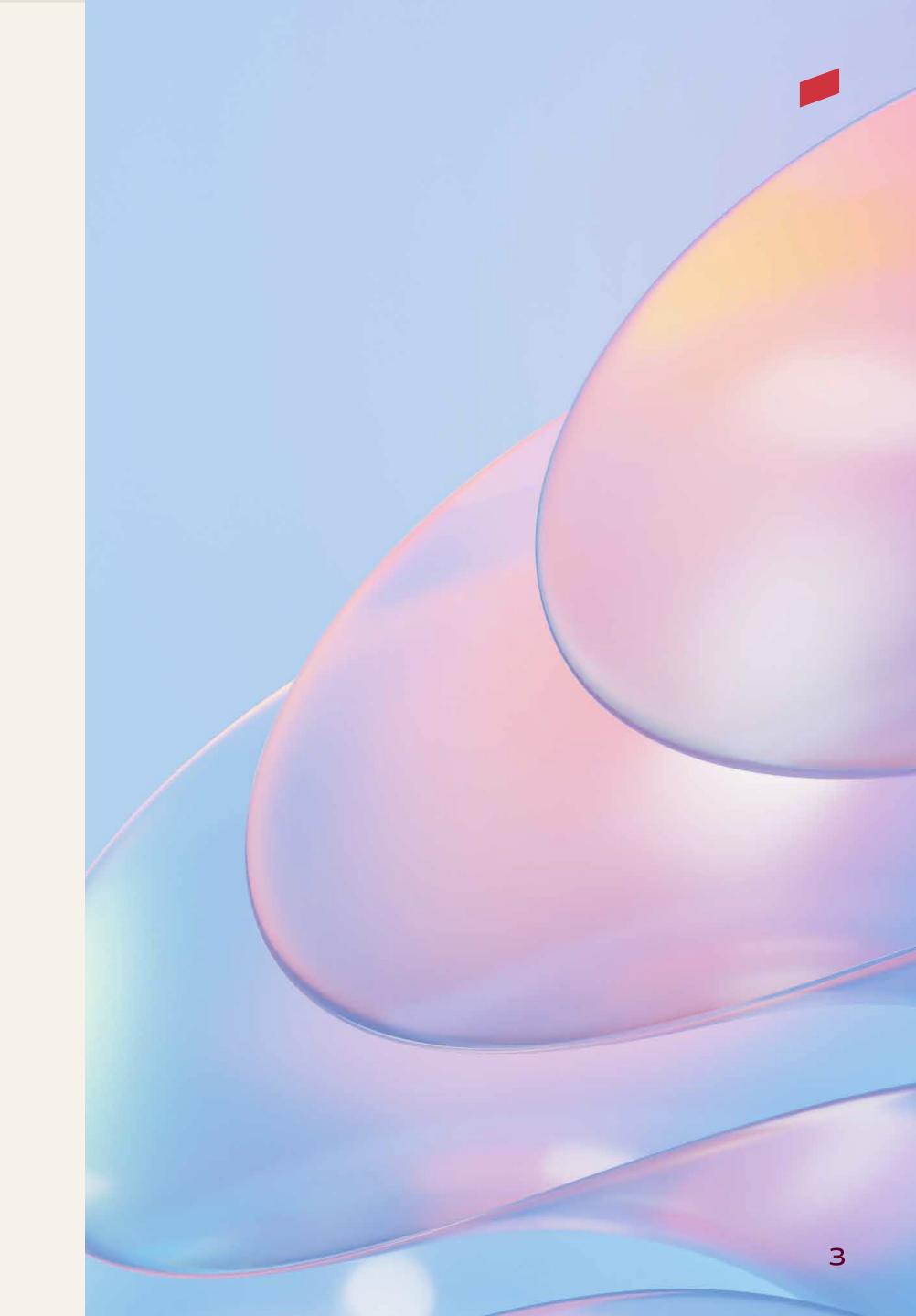Expert Advisor Healthcare, Third Eye Advisory

Content

Executive Summary

AI in healthcare is transitioning from early experimentation to a new era of "safe adoption," focusing on solving tangible problems such as high costs, labor shortages, and improving patient engagement. Organizations vary in their approach—many are "AI-Friendly," adopting low-risk tools that enhance existing workflows, while "AI-Forward" leaders integrate AI into core clinical and operational processes. This distinction is crucial, especially within healthcare delivery, where adoption is more cautious compared to the life sciences sector, where AI is already an essential competitive tool. This paper examines the path from isolated departmental use cases to enterprise-wide strategy, highlighting the foundational role of governance, secure data infrastructure, and workforce readiness in achieving transformational results.

Introduction

Over the past decade, healthcare delivery organizations have discovered how AI could help with diagnosis, personalized treatment, and making operations more efficient. The era of pure experimentation in 2023 has given way to an era of "safe adoption"—a focus on proven, low-risk, and medium-reward AI projects. While ambient assistants and AI-driven patient messaging are entering the mainstream, many applications remain isolated. Some organizations see AI as a helpful enhancement, while others view it as a strategic asset for transforming care. We refer to these two approaches as AI-Friendly and AI-Forward.

Defining "AI-Friendly" versus "AI-Forward"

AI-Friendly:
Cautious, Safe Adoption

AI-Friendly organizations explore AI through a lens of low risk and low-to-medium reward. They pay close attention to particular success stories in administration or imaging. Formal governance is absent, or there are no clear enterprise-wide AI strategies.

They rarely incorporate AI into mission-critical tasks and tend to minimize risk while prioritizing short-term return on investment.

Example

A hospital deploys an AI tool that triages radiology images to help prioritize the reading queue for radiologists, enhancing their workflow efficiency.

AI-Forward:
Enterprise-Wide, Strategic Integration

- Consider AI to be essential to competitive advantage and business strategy.

- Incorporate AI into supply chain logistics, research and development, and other phases of the value chain.

- Make strategic investments in talent, interoperability, and data infrastructure to drive growth and innovation.

- Develop AI governance frameworks to ensure the deployment of AI systems that are both morally and legally sound.

- Metrics should be centered on transformation and results rather than just return on investment.

Example

A global biopharmaceutical company utilizes AI to identify promising drug candidates, streamline regulatory submissions, enhance patient adherence through predictive analytics, and optimize manufacturing processes. All of these are connected through a unified AI governance framework.

Historical Approach: Early AI Use Cases

When AI initially appeared in the life sciences and healthcare, its uses were particular:

Medical Imaging

- In identifying abnormalities in CT, MRI, and X-ray scans, machine learning algorithms started to outperform conventional image-processing tools

- Examples include the use of AI models to detect diabetic retinopathy from retinal images or to identify early-stage lung cancer nodules that are invisible to the human eye

- Diagnostics: AI tools examined digital pathology slides to more quickly and precisely identify cancer cells

- Support vector machines and early convolutional neural networks were the foundation of early systems

- Administrative automation reduced workloads for overworked healthcare personnel while remaining ancillary to the provision of care

- Natural language processing (NLP) automates repetitive back-office tasks, such as billing, appointment scheduling, and claims processing

- Reduced workloads for overworked medical personnel, but it stayed ancillary to the provision of care

Key observation

Although these early use cases demonstrated AI's potential, they were limited by departmental silos and lacked more extensive strategic integration.

Initial Barriers to Adoption

Three fundamental barriers prevented AI's growth even as its early achievements were reported:

Data Silos

- Patient information is dispersed among incompatible labs, imaging equipment, and EHR systems

- Cross-institutional AI training was challenging due to a lack of standardization in data formats
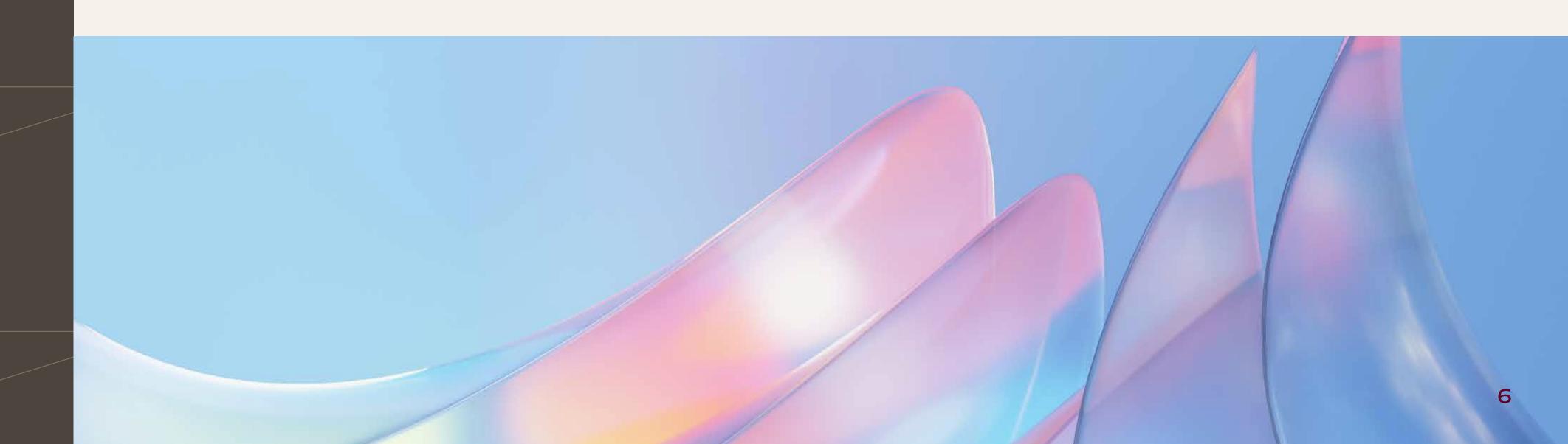
Regulatory Uncertainty

- FDA regulations about AI-enabled devices are ambiguous

- Discussion about whether "adaptive" AI models, which change over time, meet current standards for medical devices

Workforce Readiness

- Clinicians frequently lacked the necessary training to decipher AI results

- "Black box" models that provided conclusions that were inexplicable led to mistrust

Building the Foundations for AI Success

Three essential enablers are needed to make the shift to an AI-forward organization:

Sturdy Interoperability and Data Infrastructure

- Establish secure federated learning systems or centralized data lakes to ensure data privacy and integrity

- Adopt FHIR and HL7 interoperability standards to facilitate the sharing of data across systems

- For auditability, use data lineage tracking

Security, Privacy, and Compliance

- Establish a clear governance framework that addresses data usage, model validation, and ethical oversight. Provide pipelines for data anonymization and consent management systems

- Design systems from the ground up to comply with GDPR and HIPAA

- Provide pipelines for data anonymization and consent management systems

Developing a Workforce Skilled in AI

- Give executives, data scientists, and clinicians role-specific AI training

- Encourage interdisciplinary projects involving operations, IT, and R&D

- To overcome cultural resistance, integrate effective change management

Key Milestones in the AI Journey

AI in Drug Discovery

• Deep learning models now process large chemical libraries to predict compound toxicity and efficacy

• Example: AI platforms are reducing early drug discovery timelines from five years to under a year

Clinical Trials Driven by AI

• AI-powered eligibility screening of EHR data optimizes patient recruitment

• Real-time monitoring enables mid-trial adjustments by detecting adverse signals faster

Personalized Healthcare

• Predictive analytics powered by AI customizes therapies according to lifestyle and genetic information unique to each patient

• Example: AI uses tumor genomics to determine which cancer treatment has the best chance of working for a given patient

Embedding AI across the value chain

AI is incorporated into core business and care processes through the AI-Forward approach:

Optimizing Clinical and Operational Throughput

- AI optimizes operating room schedules to maximize throughput, reduce patient wait times, and improve overall satisfaction

- It can also predict equipment failure in critical hospital machinery and forecast staffing needs based on patient admission trends

Examples from the Real World

- **AI Monitoring Devices:** Wearables monitor patients with heart failure's vital signs and send out prompt alerts to clinicians

- **Remote Patient Management:** After surgery, AI sorts patients into those who require follow-up appointments

Regulatory Affairs

- AI automates the compilation of submission packages and parses regulatory guidelines to ensure compliance

- Natural language generation aids in the creation of compliance documentation

- **Digital Twins:** Treatments can be tested before being administered thanks to virtual simulations of patient physiology

- **The convergence of MedTech and Biotech:** AI-powered robotic surgical systems paired with self-calibrating laboratory analysis instruments

Becoming an AI-Forward Organization

The shift requires more than just aggressive adoption; it necessitates establishing a strong foundation of governance and strategy.

Scaling Beyond Pilots

Integrate AI into several business lines, such as patient engagement and R&D

Aligning Strategy with AI Initiatives

Steer clear of dispersed efforts and make sure AI supports patient experience, operational effectiveness, and clinical performance.

Measuring Value Beyond ROI

Incorporate metrics such as regulatory cycle time, patient safety enhancements, clinician satisfaction, and error reduction.

Overcoming Challenges and Ensuring Responsible AI

Ethical AI

- Implement plans for bias detection and mitigation into action.

- To help clinicians understand AI recommendations, explainability protocols should be established.

Navigating Regulations

- Actively collaborate with regulators to shape evolving AI guidelines.

- Stay up to date on global variations in compliance (e.g., FDA vs. EU AI Act).

Stakeholder Engagement

- To foster trust, communicate with health care professionals.

- To enhance trust, educate patients about the use of AI.

Conclusion

AI is advancing from the periphery of single departmental use cases to the core of healthcare delivery.

As AI-Forward businesses link AI investments to their strategic, operational, and clinical objectives, they can gain compounded competitive advantages, putting AI-friendly organizations at risk of falling behind.

- Those who invest in clean, interoperable data will benefit over the next ten years

- Establish strong infrastructures for governance and compliance

- Create interdisciplinary teams that are knowledgeable about AI

- View AI as a fundamental force behind transformation rather than a technology project

About Author

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Deepak is responsible for Digital Solutions and Healthcare and Life Sciences Service Offerings at Tech Mahindra. He is the Global Practice Head with over two decades of experience in Data and Analytics across healthcare, life sciences, medical devices, and pharma and manufacturing industries with a primary focus on data strategy & architecture, master data management, data governance, data visualization, AI/ML and data science. He has a proven record of 100+ successfully driving key enterprise initiatives by combining strategic/tactical expertise with a unique consultative, financial, operational, and technological skillset.

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Seth covers technology product strategy and market execution in the global healthcare ecosystem. His focus areas are healthcare information systems including EHRs and medical imaging as well as enabling technologies such as cloud platforms, AI and data analytics. Seth was Senior Director Healthcare Analyst at Gartner where he defined the "digital health platform" and authored its first competitive landscape. He led IT operations and data analytics at The University of Texas Dell Medical School, and managed medical device integration at Children's Medical Center Dallas. He also spent 10 years at Dell Inc. as a technologist and healthcare strategy director.

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