Microsoft

A platform for healthcare enterprise AI and digital transformation

Precision Imaging Network, part of Microsoft Cloud for Healthcare

Reza Forghani, MD, PhD

Neuroradiologist & medical AI expert

Microsoft

Introduction

There has been tremendous progress in computational technology and artificial intelligence (AI) in the past decade. Advanced applications using deep learning, large language models, and emerging multimodal foundation models show promise to transform healthcare. Headline-grabbing preclinical investigations demonstrate the potential of this technology, and it's only the beginning. Still, there can be significant, practical barriers to the smooth deployment and integration of AI technology in clinical practice. If organizations don't adequately address these challenges, they may hinder the ability of AI to fully realize its potential in healthcare.

Digital and AI transformation demands reimagining traditional or legacy healthcare IT to keep pace with rapidly evolving technology. The Precision Imaging Network, part of Microsoft Cloud for Healthcare, is designed to enable healthcare organizations, regardless of size, to participate and lead in an AI revolution. Its framework facilitates effective and seamless integration of AI technology that can improve the patient experience within the healthcare system and enable the delivery of better patient care.

Supporting paradigm shift in organization IT systems

It's no exaggeration that hospital IT departments were facing considerable resource constraints even before AI applications drove the recent surge in demand. Complex hospital IT infrastructure requires highly specialized expertise for effective and secure management. Even today, the burden on a modest IT staff limits an organization's ability to deploy and manage AI and other digital tools. An expected exponential increase in AI tools is positioned to further overwhelm existing systems and personnel resources. Hospitals are not designed to function as IT companies; fortunately, robust industry tools and platforms are emerging to support and enhance hospital IT teams.

Precision Imaging Network, benefiting from Microsoft's formidable infrastructure and next generation tools, offers an effective solution to help organizations succeed and thrive in the era of digital technologies and AI. It's designed to complement and support hospital IT departments and provide a cost-effective means for healthcare organizations to deploy and manage an increasing array of complex AI tools.

It offers a comprehensive, single-point solution for secure and seamless AI deployment and workflow integration. Built on Microsoft Azure, Precision Imaging Network delivers the scalability and security that enterprise-wide AI orchestration and system integration requires. It establishes a robust foundation for current and future AI deployment, including management, development, quality monitoring, and other digital transformation initiatives.

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Seamless, efficient AI application deployment

AI will continue to become more central to a healthcare organization's ability to deliver quality care and achieve operational efficiency. If organizations don't keep up with ever-evolving technology, they risk opportunity loss, weakened competitive advantage, or reduced clinician and allied professional morale — all factors in retention and recruitment.

Today, most hospitals deploy AI models individually. Typically, each AI application must undergo a full security review — an endeavor that can take three to six months or more and require substantial resources from the hospital's IT team. Anecdotal estimates suggest that the entire process from review to deployment costs between $15,000 to $20,000 per AI application.

This approach to AI application deployment is painstakingly slow and frustrating — and not scalable. It can't support the rollout of dozens if not hundreds of AI applications necessary to transform healthcare enterprises.

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In contrast, Precision Imaging Network requires one contract, one workflow component, and one integration point for systems like PACS and EHR. Multiple AI model deployments simply extend existing master agreements, alleviating the administrative, contracting, and legal burden and shortening procurement and deployment timelines. Besides passing their security, compliance, and technical reviews, the third-party AI models available through Precision Imaging Network benefit from being in a secure environment that is constantly tested and audited. This simplified approach results in more efficient, scalable, and cost-effective implementations across the organization.

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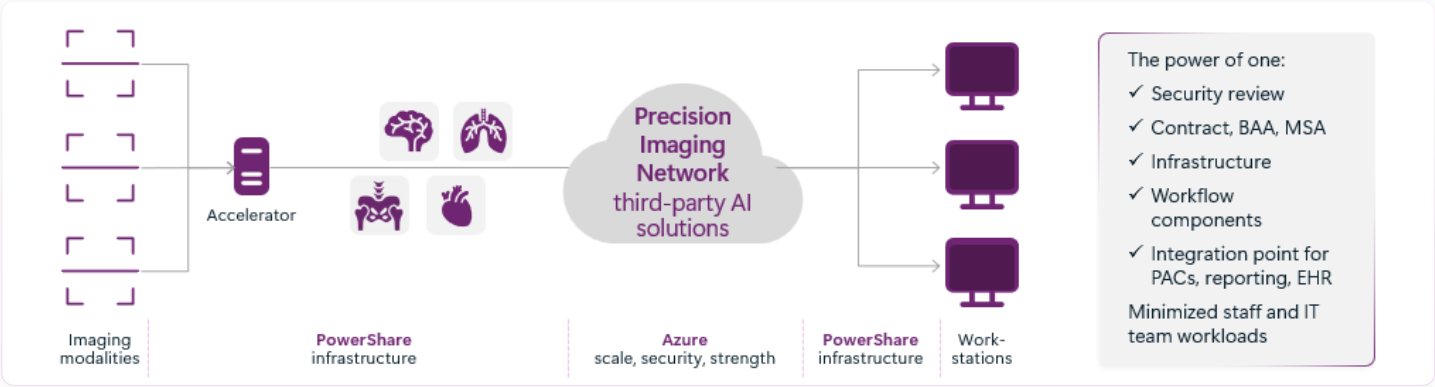
Secure, centralized access to workflow integrated AI



Precision Imaging Network supports easier and faster expansion of AI use by eliminating the need for additional BAA/MSA agreements and integration points when deploying additional third-party AI models.

AI model trials and deployment

With today's radiologist shortages clashing with ever-increasing imaging volumes, AI models offer a promising solution to help refine the radiology workflow. But for AI to return value, it must meet the unique needs and preferences of specific locations and physicians. It's common for AI application performance to vary by deployment site. Technical variations in individual scanners, the patient population, and community demographics are a few of many potential factors.

Ideally, an institution should use their own data scans to assess an AI tool's performance before acquisition. Trials allow organizations to compare AI models that perform the same task. The user experience is essential for successful adoption, so organizations must evaluate workflow integration and alignment of AI output – both its format and the data sent to the viewer or PACS.

If every AI model deployment takes the effort of a new acquisition, it's impractical to conduct trials and comparisons— despite their importance. Streamlined deployment and a collection of third-party AI applications allow providers to assess differences and identify the AI solutions that best serve their patients, physicians, and the broader organization – and that radiology teams are more likely to successfully adopt.

With its single point of access to a collection of third-party AI models, Precision Imaging Network facilitates scalable, efficient AI model deployment in weeks, not months, without straining valuable organizational resources. The organization can evaluate, select, and see value from the AI model more quickly.

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Reliability and security

In the healthcare sector, security is paramount due to the sensitive nature of patient data and the increasing threat of cyberattacks. Accessing AI models through Precision Imaging Network can limit an organization's attack surface and security risks. Comprehensive security management and implementation of encryption, access controls, regular updates, etc., is more efficient and cost-effective on a single platform compared to deploying and securing each AI application individually, allowing customers to optimize investment costs. The healthcare organization benefits from a stronger cybersecurity posture and the ability to more effectively protect sensitive patient data.

AI models accessed through Precision Imaging Network must pass a security assessment as well as privacy and tech reviews, helping address potential risks from third-party vendors. Moreover, AI developers who host their applications on Precision Imaging Network cannot access patient data unless explicit arrangements between the customer and the third-party AI application vendor are in place.

Built on Azure, Precision Imaging Network benefits from Microsoft's infrastructure and security protocols, which include a $1 billion annual investment in cybersecurity support across healthcare and other industries. Security and disaster recovery functionality is critical to protecting PHI, maintaining reliable operations, and providing secure storage and recovery of critical patient information. Precision Imaging Network is deployed with Azure full multi-region disaster recovery. All data is encrypted in transit and at rest with modern protocols. This combination of security and reliability helps healthcare organizations protect their data.

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AI across the care continuum

Precision Imaging Network serves as a common platform for deploying enterprise-wide, multi-specialty AI across the entire care continuum. AI findings from third-party models can help organizations streamline critical functions like triage, detection, diagnosis, quantification, reporting, follow-up, and analytics. By offering AI models across a range of imaging modalities and diagnostic areas, Precision Imaging Network helps healthcare providers expand AI use to various specialties and workflows and help them drive enhanced diagnostic accuracy, optimized care delivery, and more efficient decision-making. Beyond incidental findings, providers can run multiple AI models on a single exam to help care teams detect disease earlier, which can advance patient care and lower organization costs.

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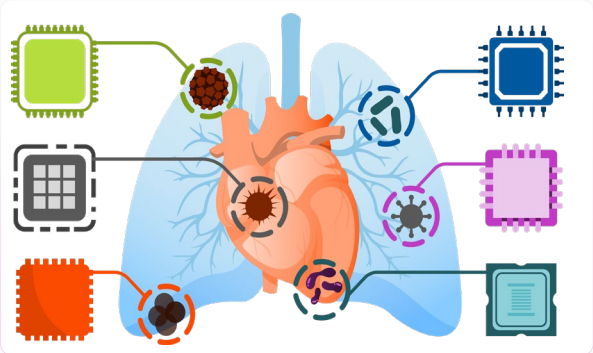
As one aspect of an end-to-end diagnostic portfolio from a single vendor, Precision Imaging Network uses native capabilities within image sharing, reporting, analytics, and follow-up solutions.

It delivers findings from third-party triage, detection, and measurement AI models to optimize the radiology workflow. The native capabilities of PowerScribe next generation reporting tools help radiologists achieve new levels of reporting efficiency, accuracy, and quality. When findings from AI models accompany recommended follow-up, Follow-up Manager helps providers proactively screen, track, and manage high risk patients to support care improvement, medicolegal risk reduction, and revenue generation. Meanwhile, mPower concordance reporting and analytics helps providers retrieve actionable information and derive insights from data.

Run multiple AI models on single exam

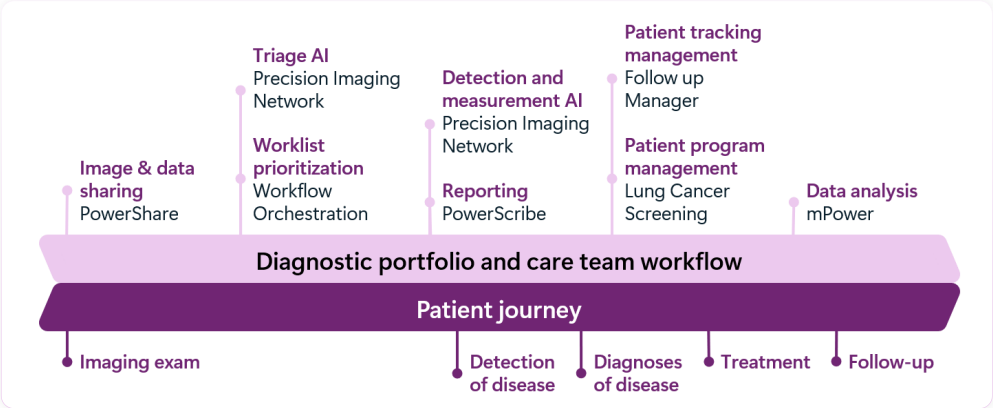


Organizations can run multiple AI models on a single exam to gain more diagnostic insight.

With AI-driven support for diagnosis, report creation, and follow-up management, organizations can help advance care continuity and outcomes by helping patients receive prompt, coordinated care across specialties and by keeping patients within the system for all necessary treatments and follow-ups.

At the same time, Precision Imaging Network is an agnostic solution. It can integrate with similar software from other vendors and achieve similar functionality.

Integrated AI from point-of-read to point-of care



A portfolio of AI-powered diagnostic solutions helps advance patient care

Foundation for digital transformation

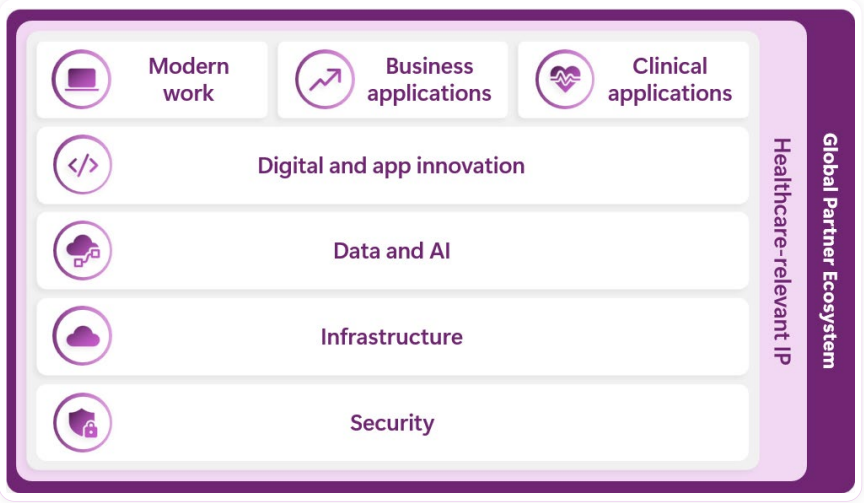
Precision Imaging Network establishes a framework for future growth and innovation for healthcare organizations. As the use of AI grows, it provides the necessary infrastructure to effectively manage stable deployment of a multitude of AI models. It also lays the groundwork for systems that monitor algorithm performance and mechanisms that detect and mitigate algorithm drift to maintain high-quality outputs over time.

Precision Imaging Network also can facilitate more effective connections between research, developers, and clinical AI deployment in the future. As a scalable and adaptable solution for integrating AI across the care continuum, it empowers healthcare organizations to be agile and innovative with future AI technology while providing a solid foundation for service lines.

The meeting of expertise from multiple sectors helps ensure that Precision Imaging Network remains at the forefront of healthcare innovation, providing a scalable, secure, and future-proof solution for healthcare organizations.

The robust infrastructure of Precision Imaging Network is one of many of Microsoft's distinguished contributions. Other AI platforms can face uncertainties due to potential acquisitions or changes in ownership. As a reliable and long-established company, Microsoft offers long-term stability, predictability, and access to groundbreaking technologies. Precision Imaging Network customers can rely on Microsoft's commitment to innovation and have confidence in their relationship with a global technology leader. Furthermore, Microsoft's extensive technological resources, including AI and cloud solutions developed across various industries, can be adapted to enhance healthcare delivery. The meeting of expertise from multiple sectors helps ensure that Precision Imaging Network remains at the forefront of healthcare innovation, providing a scalable, secure, and future-proof solution for healthcare organizations.

The value of Microsoft Cloud for Healthcare



The Microsoft Cloud for Healthcare provides healthcare organizations with a comprehensive platform for digital transformation.

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