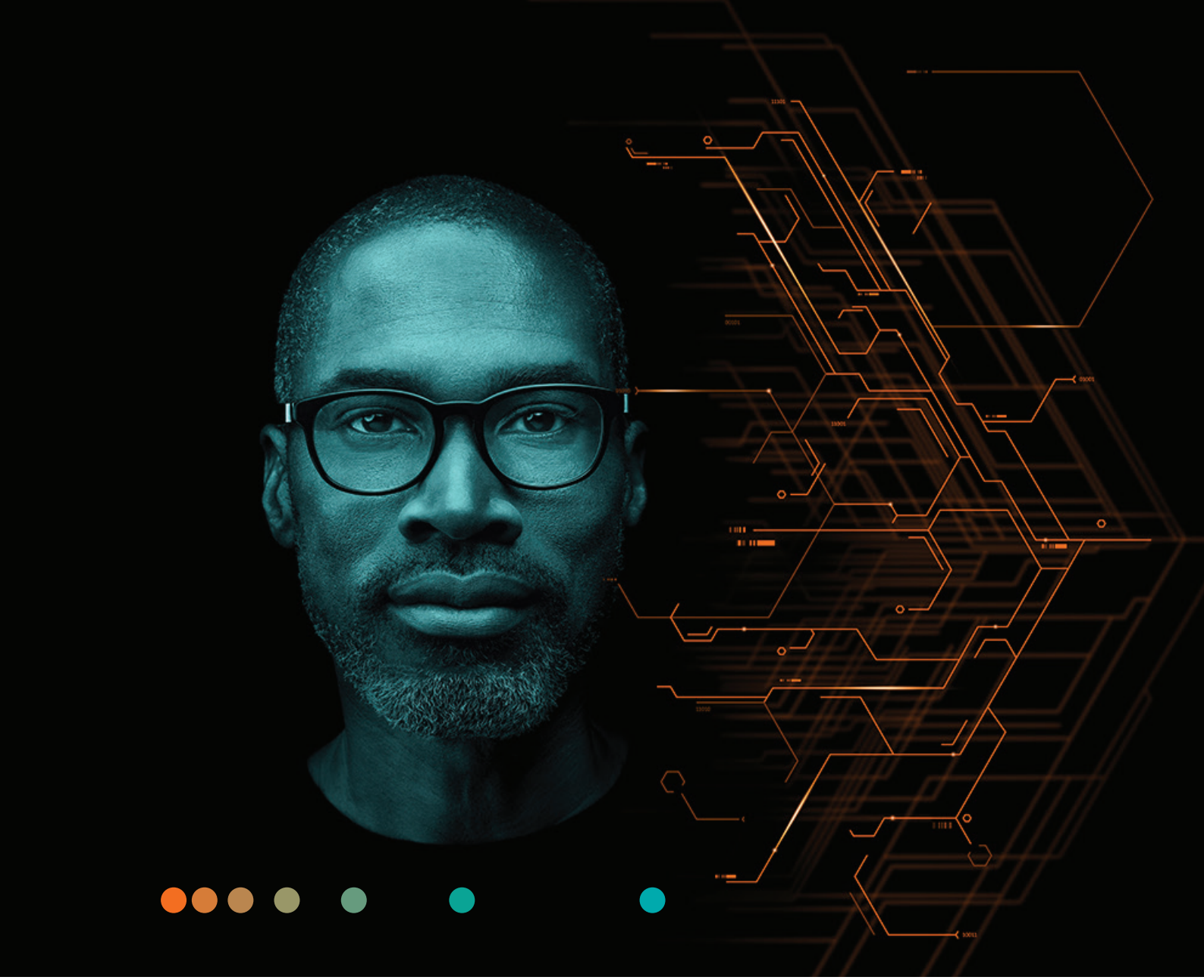


Is your organization prepared for what's next?

A look at emerging trends in enterprise imaging

siemens-healthineers.us/syngocarbon

SIEMENS Healthineers

Identifying challenges. Creating solutions.

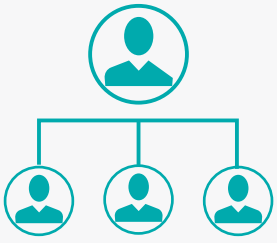
"Change is the only constant," mused the Greek philosopher Heraclitus, some 2,500 years ago. This axiom still holds true today, particularly in the field of radiology, where technology, data management systems, and workflows continually evolve.

Trends tend to arise as an attempt to address industry challenges. Currently, for example, the US radiology industry continues to experience workforce shortages and reimbursement decreases while there is an increased need to perform even more imaging evaluations. Not surprisingly, several new trends focus on workflow and efficiency solutions.[1] Indeed, managing ever-increasing volumes and varieties of patient data and improving operational and clinical KPIs is possible only when a harmonized IT infrastructure is in place.

Here, we'll discuss the main trends that are shaping the future of enterprise imaging.

Impact Key

C-suite



Department heads

Physicians *(radiology, cardiology, laboratory, pathology, surgery, and other specialties)*

IT

Integrating AI safely and responsibly

Artificial intelligence (AI) integration is not exactly breaking news in radiology: In fact, it's been implemented for years, especially in response to recent workforce shortages. But as new AI and applications of AI continue to emerge, quality control is a priority. Learning how to integrate AI safely and responsibly is essential, especially when multiple vendors, departments, and data considerations are concerned.

Given the ever-evolving nature of AI, another challenge is how to best vet AI vendors. It represents a huge investment in terms of both time and money, and with a dizzying array of options, it can be challenging to understand what works best for your organization.

Consider using the discussion points on the right to determine if the vendor's features and benefits align with your organization's strategic imperatives.

Choosing an AI imaging vendor

Product considerations

- ☐ What is the vendor's FDA approval status?
- ☐ Is the platform scalable? Will it integrate easily with our current systems?
- ☐ Is the functionality future proof?

Vendor considerations

- ☐ Is the vendor stable? What is their reputation in the market? How long have they been around?
- ☐ Can they provide case studies that match our unique situation?
- ☐ Are they involved in strategic partnerships and industry relationships?

Financial considerations

- ☐ What is the cost to implement the platform? What ongoing costs will be incurred?
- ☐ Can we estimate or project how much the platform will improve our efficiency?
- ☐ What are the measurable clinical and financial outcomes that can define success?

Is consolidation on the horizon?

In this oversaturated AI imaging market, it's sink or swim for new and smaller vendors. The likelihood of consolidation is now more about "when" than "if." Larger AI platform vendors, software vendors, modality vendors, and adjacent vendors will likely seek to acquire fledgling and underfunded AI partners to extend their offerings.[2]

AI bias and quality control

Discussions at Radiological Society of North America (RSNA) 2024 centered on what's known as "AI bias." Despite efforts to maintain an FDA-cleared configuration, there have been some reports of automated algorithms "drifting." Over time, this bias can make AI less accurate. Regular algorithm assessments will likely become more common, leading to new AI administrative and quality control roles.

To facilitate this, the American College of Radiology created the Assess-AI National Radiology Data Registry. This quality registry monitors clinical AI results and assembles contextual results in an effort to monitor accuracy. It also allows centers to see their baseline and shifts over time or conduct comparisons with other radiology departments participating in the program.[3]

AI services not currently being reimbursed

Newly introduced bills, including the bipartisan Health Tech Investment Act (S. 1399), are striving to address AI reimbursement.[4] This important step will help enable and expand patient access to AI health solutions.

How can AI be successfully integrated into enterprise imaging?

A look at Syngo Carbon

Syngo Carbon* uses insights from AI and multidisciplinary data to aggregate imaging and other diagnostic information so every member of the care team can have a comprehensive view of the patient. Intelligent reading tools and the automatic integration of real-time findings guarantee structured, consistent reports that help clinicians across the enterprise better navigate care delivery. This can lead to accelerated, more efficient workflows, increased precision, and accuracy for standardized results. Backed by decades of extensive experience and research, Siemens Healthineers continues to be a leader in safe, effective AI integration in radiology.

Security/Cybersecurity

Ensuring both data security and cybersecurity is critical. Within the last few years, many hospitals and health systems have been attacked or hacked. This not only costs the system financially but can also interrupt and even halt care altogether. For this reason, cybersecurity has become an increasingly important priority when considering enterprise imaging software.

In 2024, the CrowdStrike incident proved to be a cautionary tale. Caused by a faulty software update, CrowdStrike became the largest single computer outage in history to date. It forced radiologists to hand-transcribe their reports and to delay nonurgent cases, leading to an estimated $2 billion in financial losses.[5] Although non-malicious, CrowdStrike demonstrated the devastating impact that a cyberattack could have on a healthcare system, with far-reaching privacy, financial, workflow, and health implications.[6]

of the US population experienced healthcare data breaches in 2024.[7]

of providers are unsatisfied with their current enterprise imaging system's security measures.[7]

Many organizations are now implementing plans on how to respond to cyberattacks, including the development of radiology-specific crisis response teams. The best plans center first on prevention and making security a foundational element across enterprise imaging.[8]

This prevention can involve refreshing the imaging infrastructure while strengthening the security infrastructure at the same time. A system refresh can be done for a number of reasons: to harness the cloud's storage capabilities, for example, or to increase shareability and collaboration. It's also an ideal time for IT to perform security audits and instill more stringent patient data privacy controls, 24/7 monitoring, zero-trust protocols, and other features designed to bolster security.[9,10]

"On an industrywide level, the outage underscored healthcare's sheer reliance on technology – a feature so ubiquitous that it is easily taken for granted. Modern radiology practice would be inconceivable without PACS, DICOM, and EHR integration."

- Vrushab Gowda, MD, JD,
Massachusetts General Hospital, Boston,
As quoted in RadiologyBusiness.com

How can cybersecurity be addressed in enterprise imaging?

A look at Syngo Carbon

Syngo Carbon Image and Data Management (IDM) runs in a secure and fully virtualized environment – on-site or in the cloud – and conveniently scales from department to enterprise. It addresses cybersecurity by consolidating patient-centric data points into one spot across all clinical fields and departments. By reducing data silos and eliminating redundant systems, Syngo Carbon IDM minimizes potential attack surfaces and simplifies access control and auditing. It also supports preventative protocols, such as encryption, user authentication, and role-based access, helping healthcare organizations proactively safeguard patient information.

Application rationalization and IT consolidation

Hospitals and health systems are looking to simplify their IT structures. It's a driving force to modernize and future-proof enterprise imaging systems. In radiology, this means consolidating the number of applications by identifying and removing redundancies in software and even vendors with whom they work. It also means rationalizing which information and processes should be housed in the cloud and which need to stay on premise. Effectively performing this exercise can not only reduce costs but can also enhance collaboration and improve efficiency by streamlining workflows.

Application rationalization and IT consolidation can include:

- **Merging systems into one integrated platform:** This can cut costs on licensing fees, subscription costs, and support expenses while streamlining IT management and eliminating the need for staff training on multiple systems.
- **Finding discounts and renegotiating contracts:** Enterprise imaging departments may be able to obtain volume discounts or renegotiate maintenance agreements.
- **Reducing IT infrastructure costs:** When you carefully curate applications, savings can result in decreased demand for servers, storage, and networking resources; fewer hardware requirements; and lower energy consumption and maintenance expenses.
- **Scalability and strategic agility:** Consolidated architecture makes it easier to modernize, automate, and integrate with emerging technologies like AI.
- **Improved security and governance:** Application rationalization and consolidated IT makes it easier to enforce access controls, monitor activity, and ensure compliance.[11]

It's important to note that application rationalization and IT consolidation is not a once-and-done exercise. IT should make regular assessments to identify redundancies and obsolete software.

How can organizations facilitate application rationalization and IT consolidation?

A look at Syngo Carbon

Integrated IT solutions like Syngo Carbon help simplify the complex process of application rationalization for providers. This enterprise imaging and reporting solution consolidates major elements like the VNA, specialty PACS (radiology, cardiology, pathology), advanced visualization, research platforms, niche applications, and encounter-based imaging workflows. This allows hospitals to allocate resources more effectively and ensure those resources are closely aligned with their broader strategic goals, including improving operational efficiency and delivering higher-quality care.

Streamlining application choices and rationalizing what should be housed in the cloud is an important housekeeping task that enterprise imaging departments should regularly perform.

Remaining productive and efficient in light of radiologist shortages

The national shortage of qualified radiologists in enterprise imaging continues. Demand started to outpace supply during the pandemic in 2020, and this trend shows no signs of slowing down. In fact, forecasts predict this shortfall will continue into 2055. As a result, today's radiologists are overworked to the point of burnout.[12]

The rising demand for imaging coupled with this limited workforce means that hospitals and health systems are trending toward enterprise imaging solutions that can help pick up the slack. They are seeking systems that digitalize workflows and increase productivity and efficiency across all departments.

1 in 3 radiologists globally are experiencing burnout.[13]

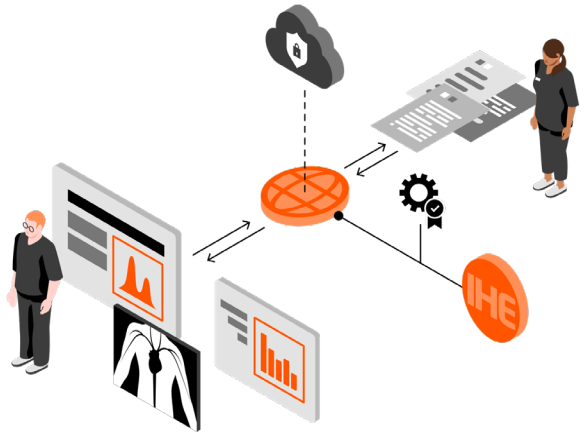
When integrated safely, AI – the first trend we discussed – can also help overburdened radiologists by automating certain tasks, helping with image interpretation, and calling out abnormalities.

Although hybrid and remote work models are reshaping radiology, **only 20% of providers** feel very satisfied with the way their current enterprise imaging systems support this shift.[7]

Which tools can help alleviate the workload of overworked radiologists?

A look at Syngo Carbon

Syngo Carbon's open data management system, combined with an integrated reading and reporting workspace, lets radiologists switch between tasks without disrupting their workflow. Its AI capabilities further increase efficiency by eliminating repetitive tasks in their daily routine. Serving as the point of consistency, Syngo Carbon makes it easier for departments to work together throughout the entire patient journey. By capturing diagnostic data that is reliable and reusable, it helps teams deliver more effective, personalized treatments with greater confidence and fewer repeat assessments.



Continued growth of teleradiology and telehealth

The industry needs more radiologists, and since residents are showing more interest in working remotely, performing remote reads is a viable solution. Making teleradiology a seamless reality is cogent from financial, workflow, and outcomes perspectives. Full remote reads are a sensible way to read more scans with limited staff.

Systems that enable fully integrated diagnostics not only make remote reads possible, but are also more efficient and comprehensive. Multiple enterprise imaging platform capabilities and factors contribute to providing remote and hybrid providers with the best experience possible.

Taking remote scanning a step farther, Syngo Carbon remote scanning (powered by *syngo* Virtual Cockpit) facilitates virtual access to experts. As the first FDA-cleared, multi-vendor remote scanning software, it allows users to achieve a higher level of standardization and diagnostic consistency. It also enables care teams to increase productivity and provide the highest quality of care in all locations.[14]

What enables high-quality, connected care in remote imaging environments?

A look at Syngo Carbon

Syngo Carbon makes high-quality, personalized care possible for patients by connecting the teams that deliver it.

- **Robust image and data management** – Makes it easier for teams to work together throughout the entire patient journey
- **Zero-footprint enterprise viewer** – Allows for enterprise-wide distribution and cross-departmental collaboration
- **Consolidated and multidimensional patient data** – Ensures all care team members have a comprehensive view of the patient
- **Workflow and worklist orchestration** – Affords all departments involved access to consistent information from a single source regardless of equipment, vendor, time, or place
- **Ease of mobility and system access** – Enables easy access to the web-based platform, anytime, anywhere
- **Remote scanning assistance for imaging procedures** – Access virtual experts for assistance 24/7

Evolution becomes a revolution

In 2025, enterprise imaging trends are transforming challenges, such as the integration of AI, into opportunities to improve patient care and workflow efficiencies while remaining financially responsible.

As trends in enterprise imaging continue to evolve, data is gathered to evaluate their long-term impact. As organizations adopt these solutions, a consensus on needed changes will point us toward tools and information that will shape the future of enterprise imaging and, in turn, patient care.

Syngo Carbon: Where care connects

↗ Learn more about how Syngo Carbon can help you stay ahead of these evolving trends.

References

1. Fornell D. Key trends in enterprise imaging. *Health Imaging*. Published online May 13, 2024. Accessed May 19, 2025. https://healthimaging.com/topics/health-it/enterprise-imaging/key-trends-enterprise-imaging
2. Thompson A. Top 5 predictions for the imaging IT and AI markets in 2025. *AuntMinnie.com*. Published online Jan 15, 2025. Accessed May 19, 2025. https://www.auntminnie.com/imaging-informatics/artificial-intelligence/article/15712238/top-5-predictions-for-the-imaging-it-and-ai-markets-in-2025
3. American College of Radiology. Performance monitoring (Assess-AI). Accessed May 19, 2025. https://www.acr.org/Data-Science-and-Informatics/AI-in-Your-Practice/Performance-Monitoring
4. Allegretto A. Senators introduce medical AI reimbursement bill. *AuntMinnie.com*. Published online Apr 10, 2025. Accessed May 19, 2025. https://www.auntminnie.com/imaging-informatics/artificial-intelligence/article/15742590/senators-introduce-medical-ai-reimbursement-bill
5. Gowda V, Alkasab T, Gupta R, et al. The CrowdStrike incident and practice disruption: IT concepts to address business continuity. *Acad Radiol*. 2025 May;32(5):3092-3095. doi: 10.1016/j.acra.2025.02.005. Epub 2025 Feb 18. PMID: 39971701.
6. Stempniak M. Cyber outage forces radiologists to transcribe reports, delay nonurgent cases. *Radiology Business*. Published online Jul 22, 2024. Accessed May 19, 2025. https://radiologybusiness.com/topics/health-it/cyber-outage-forces-radiologists-transcribe-reports-delay-nonurgent-cases
7. Ruppar D. Frost and Sullivan. *The State of Enterprise Imaging: Voice of Providers Research Study.* 2025.
8. Stempniak M. How radiology groups can contain damage from future cyberattacks. *Radiology Business*. Published online Feb 20, 2025. Accessed May 19, 2025. https://radiologybusiness.com/topics/health-it/enterprise-imaging/how-radiology-groups-can-contain-damage-future-cyberattacks
9. Chopra R. Imaging practices can restore their clinicians' cybersecurity confidence with these four steps. *MedCity News*. Published online Nov 4, 2024. Accessed May 19, 2025. https://medcitynews.com/2024/11/imaging-practices-can-restore-their-clinicians-cybersecurity-confidence-with-these-four-steps/
10. Kalmar M. Shaping the future of radiology in 2025: Trends, threats, and opportunities. *AuntMinnie.com.* Published online Jan 14, 2025. Accessed May 19, 2025. https://www.auntminnie.com/practice-management/article/15712124/shaping-the-future-of-radiology-in-2025-trends-threats-and-opportunities
11. Rogowski C. Application rationalization can provide for rapid self-funded OpEx reduction. *Innovative Consulting Group*. Published online Mar 11, 2024. Accessed May 19, 2025. https://innovativecg.com/application-rationalization-can-provide-for-rapid-self-funded-opex-reduction
12. Christensen EW, Parikh JR, Drake AR, et al. Projected US Radiologist Supply, 2025 to 2055. *J Am Coll Radiol.* 2025 Feb;22(2):161-169. doi: 10.1016/j.jacr.2024.10.019. PMID: 39952776.
13. From burnout to balance: leveraging enterprise imaging for radiologist well-being. *AuntMinnie.com*. Published online Oct 19, 2024. Accessed May 19, 2025. https://www.auntminnie.com/resources/webinars/video/15706290/agfa-healthcare-from-burnout-to-balance-leveraging-enterprise-imaging-for-radiologist-wellbeing
14. Stempniak M. Radiology M&A expert shares 6 trends to watch in 2025. *Radiology Business*. Published online Apr 11, 2025. Accessed May 19, 2025. https://radiologybusiness.com/topics/healthcare-management/mergers-and-acquisitions/radiology-ma-expert-shares-6-trends-watch-2025

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