SIRONA

Reimagining the Economics of Imaging

Rebalancing the Cost, Capacity, and Capability of Radiology for Hospitals and Health Systems

The radiology crisis has become impossible to ignore. As entrenched, on-premise infrastructure and fragmented solutions cause backlogs and burnout, radiologists are clamoring for a better way forward…

The Economic of Imaging at Scale

Every year, medical imaging becomes a more essential part of the modern patient record. Today, imaging is ordered in more than 54% of emergency department visits and incorporated into nearly 15% of all patient encounters nationwide.[1] The adage *"a picture is worth a thousand words"* has never been more accurate in a healthcare landscape increasingly driven by visual data and diagnostic precision.

Imaging's growth is not simply a byproduct of technology; it's a reflection of its clinical indispensability. Over the last five years alone, nearly 75 new, medically validated imaging-based procedures have been introduced, spanning modalities from quantitative MR and PET-CT to image-guided therapeutics.[2] These innovations signal both the breadth and depth of imaging's influence across the care continuum—from early detection to minimally invasive intervention.

In our earlier publication, Radiology Untethered, we explored the transformative potential of cloud-native radiology platforms designed to unify PACS, reporting, and enterprise worklist functions within a single, intuitive environment. The immediate benefit is clear: simplified physician workflow and reduced operational overhead.

Yet beneath the surface lies something more profound. In consolidating the fragmented systems that define radiology today, cloud-native integration introduces a new economic model—one in which performance, scalability, and collaboration are not constrained by local infrastructure or physical presence.

When radiology is freed from fixed workstations, data centers, and manually orchestrated workflows, the economics of medical imaging fundamentally reset. A cloud-based ecosystem reshapes both supply and demand:

- **Supply**, through elastic computing power, global collaboration, and resource sharing.
- **Demand**, through faster report turnaround, expanded access to subspecialty expertise, and improved patient outcomes.

These forces are converging toward a new balance—one not seen since digital image management first became mainstream more than two decades ago.

The Hidden Cost of Complexity

The radiology tech stack within most health systems is often an inherited mess. Over decades, hospitals have layered PACS, reporting, and workflow tools across sites, specialties,

and service lines. Each component works (technically), but together they create a fragmented ecosystem that quietly drives cost and constraints on agility.

The visible contract price of a PACS system is only the beginning. The hidden layer includes:

1. **Capital refresh cycles:** $4–6 million every 5–7 years for infrastructure renewal.
2. **Operating overhead:** Roughly $1 million annually in monitoring, patching, and vendor maintenance.
3. **Labor inefficiencies:** IT and radiology staff time consumed by system upkeep.
4. **Clinical drag:** Fragmented workflows that slow turnaround times and delay patient movement.

These costs do not reflect mismanagement; they are the residual burden of an architectural paradigm built for an earlier technological era. This legacy complexity has set the stage for a fundamental rethinking of how imaging IT should operate in the modern healthcare economy.

When Systems Converge

A structural shift is now underway: as imaging platforms evolve from local infrastructure to integrated, cloud-delivered environments, an important boundary begins to dissolve, and systems of record (PACS) and systems of care (reporting) start to function as one.

- **The explicit outcome of this convergence is measurable:** Health systems see flatter cost curves, elimination of hardware refreshes, and predictable total cost of ownership.
- **The implicit outcome is more transformative:** The redistribution of both radiologist supply and imaging demand across a shared, intelligent network

In a unified cloud model, radiologists' time becomes elastic. Expertise flows to where it is needed, unconstrained by location or institutional boundaries, and imaging demand can be dynamically balanced against available capacity.

The system itself begins to self-level, creating a balance between the production and consumption of imaging services that no single site could achieve in isolation.

The Economics of Balance

Once imaging is liberated from fixed infrastructure, its economic behavior changes fundamentally:

- **Fixed costs become variable.** Hardware and refresh cycles give way to usage-based operational expenses.
- **Idle capacity becomes redeployable.** Radiologist productivity and subspecialty coverage scale with workload rather than headcount.
- **Innovation becomes continuous.** New capabilities enter the platform organically rather than through disruptive upgrade projects.

Benefits extend beyond cost containment into throughput, turnaround, and clinical access. Imaging ceases to be a static cost center and becomes a dynamic engine of system efficiency.

The result is an operating model where performance scales with demand instead of being constrained by it.

Conclusion

The economic foundation supporting radiology practices has shifted. Economics has hardened, systems multiplied, and independence has become a burden to carry. Scale replaced familiarity; infrastructure overshadowed expertise. The very qualities that defined the profession's value became liabilities.

But the pendulum is swinging back.

A new equilibrium forms when technology dissolves friction rather than adds to it. The same forces that once fragmented radiology now have the potential to reconnect it — restoring agency to physicians, resilience to practices, and continuity to the communities they serve.

The industry's next era will not be defined by who owns the infrastructure, but by who benefits from its liberation. When that happens, the ultimate winners will be the same as they were at the start — radiologists, their collaborators in care, and the patients who depend on them.

Endnotes

1. **CDC National Hospital Ambulatory Medical Care Survey (NHAMCS, 2022); National Ambulatory Medical Care Survey (NAMCS, 2019).**
2. **American Medical Association CPT® Editorial Panel Reports (2021–2025);** analysis of newly introduced imaging-related Category I and III procedures.
3. **Advisory Board Radiology IT Cost Benchmarks (2022); AHA Annual Survey (2021); industry median cost estimates** for PACS/VNA refresh and support operations.