

# AI in Radiology Is a Matter of Value

Leo Gurvich

**Mr Gurvich** most recently served as senior vice president of business development for Enlitic, a Silicon Valley radiology AI start-up.

Artificial intelligence (AI) has become one of today's most discussed topics in radiology. When it comes to AI, medical centers, hospitals, and clinics all ask the same questions: What is AI? Is it ready for clinical use? How do we integrate it into our department? Who should we buy it from? Do we work with a start-up? Do we go with a household name like GE, Siemens, or Philips? Or do we choose a software giant such as AWS, Google, or Microsoft?

These are just some of the questions that run through the mind of physicians, administrators, and hospital executives.

Vendors, on the other hand, ask different questions: How do we build our AI market? How do we demonstrate our product's value? Who are our buyers? Does our product increase revenue or improve efficiencies? Who are our competitors? Is there reimbursement? Do we have enough funding?

Regardless of who is doing the asking, all these questions relate to three basic issues: product value, product market, and competition.

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## Product Value

AI products that generate value consist of three types: products that increase revenue; those that improve efficiency; and those that improve medical imaging quality. Products that increase revenue either bring in new patients that can benefit from

reimbursable studies, or they deliver results with potential additional reimbursement. Whiterabbit.ai has a product that improves breast cancer screening while bringing new patients for scanning. Viz.ai and aidoc have stroke assessment software that has its own reimbursement code.

AI products that increase efficiency either improve workflow or assist physicians in reading scans. Subtle medical has products to decrease imaging time for PET and MR. Arterys has software for cardiac and lung assessment that saves time for interpreting physicians. Products that improve quality are the easiest to identify, but their value is the most difficult to demonstrate. An example of quality improvement is Zebra Medical software for pneumothorax detection.

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## Product Market

I typically try to answer market questions from the standpoint of determining the potential buyers of a product; ie, those who will benefit from the product. The US market for AI is complex, owing to the different types of radiology providers. As a result, potential buyers fall into six major categories:

- Hospitals that employ radiologists;
- Hospitals that contract radiologists to read studies;
- Academic institutions that employ radiologists as part of the medical school;

- Independent radiology groups that provide only professional services;
- Private radiology groups that provide turn-key services; and,
- US government institutions.

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## Market Competition

A walk through the AI pavilion at the annual RSNA meeting, where more than ten vendors showcase their AI solutions, reveals how challenging that answering the competition question can be. I typically look at it this way: Who or what else is competing for the money and institution needs to purchase my solution? How do I move our solution to the top of the prospect's purchasing list?

All these questions — and their answers — feed into the biggest question of all: What is the market value for the company and its products? Vendors strive to deliver the highest possible value to the largest total accessible market with the least amount of competition. The size of the market depends on what market segments above could use the solution. The value per user and consequently the product price depends on the ROI that each group could yield from the use of the product. AI solutions with the greatest perceived value face the least competition.

My hope is that AI innovation will continue to focus on helping radiologists diagnose patients faster and more accurately.