

# An Operational Approach to Driving Enterprise Imaging Outcomes

In 2017 KLAS convened nearly 60 healthcare executive thought leaders in enterprise imaging from both provider and vendor organizations to identify key functionalities and best practices to help push the industry forward. A survey was created for KLAS to go out and measure the most advanced enterprise imaging organizations. Following the 2017 Enterprise Imaging Summit, KLAS interviewed 137 of the most advanced healthcare organizations executing their enterprise imaging strategies about their experiences. Our goal was to understand what factors allow these organizations to achieve meaningful outcomes. As the data flowed in, several key operational areas emerged as essential for driving enterprise imaging outcomes; topics included governance, workflow, partnership, and delivery. Another trend that emerged is that those provider organizations who are not seeing outcomes are often taking shortcuts in these areas (e.g., do not have a governance structure, have not engaged deeply with their vendors, etc.). Dr. Chris Roth, Vice Chairman of Radiology at Duke, invited all participants to work collaboratively during the conference: *"All of us will be an imaging patient one day and we all have the privilege of designing the system that will be taking care of us. **We must expect faster, higher quality, and more reliable systems.**"*

During the 2018 summit, participants discussed these findings and identified the most impactful best practices that will benefit the industry and help both providers and vendors drive successful outcomes. Both providers and vendors can use those guiding principles as they develop and expand their own enterprise imaging strategies.

**The results of this summit are being publicly shared in an effort to improve the success with which enterprise imaging is being achieved.**

## Purpose of the Summit

- 1** Build an enterprise imaging navigation tool to help providers and vendors chart a successful course to achieve enterprise imaging outcomes.
- 2** Invite the industry to make a collective agreement to adhere to and follow these best practices and principles as they drive toward successful enterprise imaging outcomes.

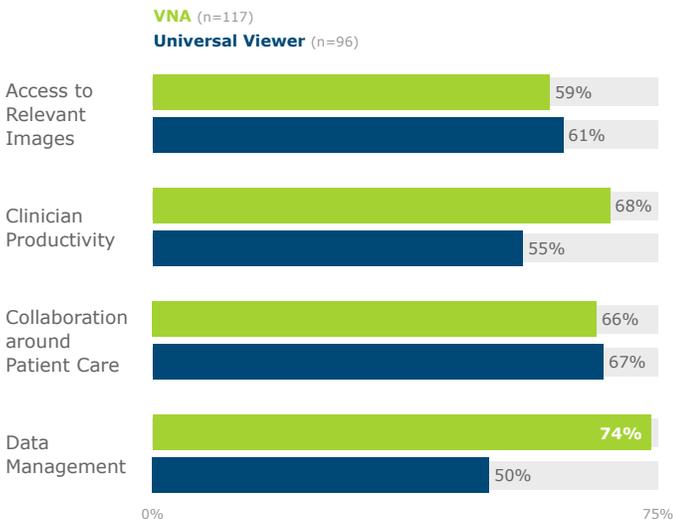


# Introduction

Enterprise imaging has the potential to revolutionize patient care by increasing physician collaboration, improving access to critical patient images, making physicians more productive, and improving data management. Achieving these outcomes is no small feat, however. As they embark on their journey, providers must make decisions about the approach (whether it should be centralized, federated, deconstructed, etc.), rules and governance, whose technology they will leverage, and how they will roll out their strategy over time. Given the complexity of enterprise imaging, it is no surprise that some provider organizations see success and achieve outcomes while others face myriad obstacles that prevent them from recognizing the desired return on investment.

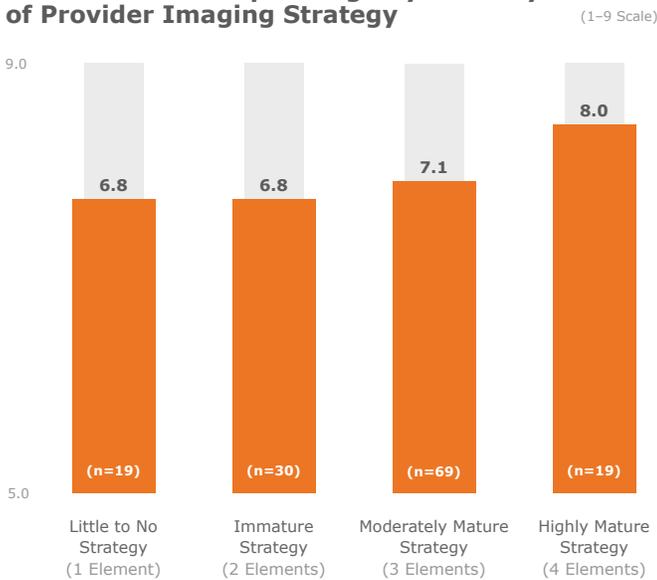
## What Outcomes Are Providers and Their Vendor Partners Achieving?

Percent of Providers Who Report Increased Satisfaction in the Following Areas



As KLAS has watched this market evolve, two things have become increasingly clear. First, success in enterprise imaging does not happen by accident; success is deliberate, and taking shortcuts to reach the destination often causes problems down the road. Second, most providers would not label themselves as experts in enterprise imaging, and they are relying heavily on expertise and guidance from their imaging vendors to help make them successful. In fact, providers who have reached the highest levels of maturity in their enterprise imaging strategies in four key areas—strong governance, organizational funding and IT support, ability to ingest images electronically, and a fully deployed encounter-based imaging strategy—report that their vendors are strong partners who have helped them reach success. *“[Our vendor] has been key in building our strategy,”* said an IT director who reported success in enterprise imaging. *“We haven’t been using our VNA for very long, but we can already see a positive impact. Governance is key. We started early due to the feedback from other providers and the advice of [our vendor]. I can already see the benefit of doing things correctly from the beginning.”*

## Vendor Partnership Rating—By Maturity of Provider Imaging Strategy



On the other end of the spectrum, when vendors are not providing the necessary level of guidance to their customers, providers report challenges around adoption, connecting additional services lines, and achieving outcomes. According to a VP of radiology, *“Universal viewers require a lot of work from both providers and vendors. . . . While we have the responsibility to encourage adoption, we would love to receive help from [our vendor]. They should provide best practices and benchmarks so that we can hold our physicians accountable. . . . They should work more closely with us so that we can get better results, which would impact and help everyone.”*

There are several key areas where vendor guidance coupled with provider work can make a notable impact on providers’ success in enterprise imaging: workflow, governance, delivery, and outcomes. In April 2018, key provider thought leaders, imaging vendors, and EMR vendors met to create a list of best practices and key topics for consideration that the industry can use to avoid taking potentially detrimental shortcuts and increase the odds of success in enterprise imaging.

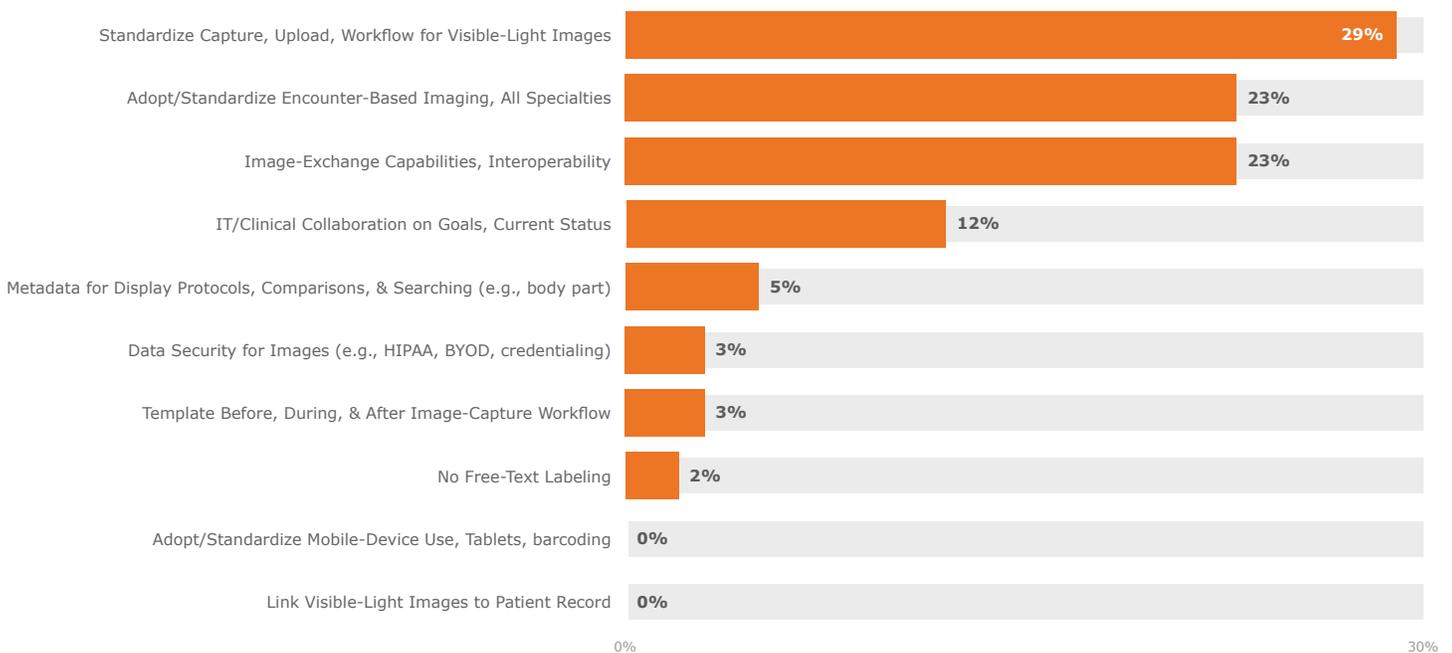
Note: Maturity level is determined by outcomes achieved, ability to electronically ingest images, governance structure, how enterprise imaging is funded and supported, and deployment of an encounter-based imaging strategy.

## Workflow

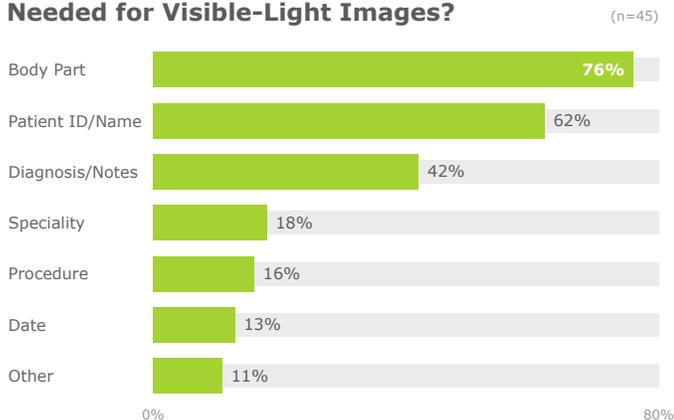
Ensuring that clinicians have access to patient images in the EMR is essential to increasing physician collaboration around patient care. In fact, when asked about what outcomes they are achieving, providers who do have integration with the EMR are quick to note that it has been integral to their success: “[Our viewer] is fully integrated with our EMR, and that has improved outcomes in many ways. I even think that integration has increased system adoption by our referring physicians. [Our viewer] is easy to use, so most of the referring physicians are able to navigate the two systems with few problems if any” (PACS administrator).

Providers and vendors who attended the 2018 KLAS Enterprise Imaging Summit identified several areas where improvements could be made relating to workflow. Of those solutions, three stood out as the most impactful. First, the need for providers to standardize the capture, upload, and workflow for visible-light images was made clear. Second was the importance of standardizing for encounter-based imaging for all specialties. During KLAS’ enterprise imaging research, the need for encounter-based imaging was frequently mentioned in provider interviews, and almost half of those interviewed do not have a plan to deploy this today. Third, the need for image exchange and improved interoperability was underscored. These suggestions, as well as other key recommendations for avoiding shortcuts, can be seen in the chart below.

### Which Will Have the Greatest Impact on Workflow Success? (n=42)



### What Are the Three Metadata Elements Needed for Visible-Light Images?

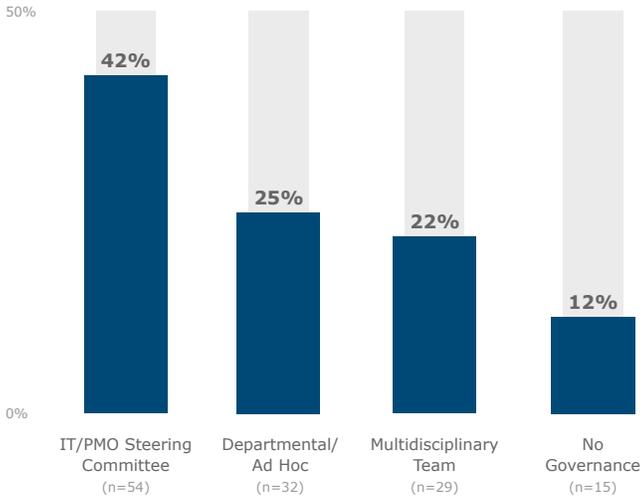


Another key takeaway from the provider and vendor discussion on workflow was the need to move to standardize what metadata should be included with captured images. The summit groups were then asked to identify what three metadata elements are the most critical. There was a strong consensus around including the body part, with patient information (e.g., name and ID) and reason for the encounter (e.g., diagnosis, primary complaint) following as the next most important pieces of metadata.

# Governance

While the importance of governance may seem intuitive to some, a surprisingly large number of providers doing enterprise imaging do not have clear governance in place. Even among those who do, governance may live at the department level and lack the participation and input of the greater organization. In these cases, the lack of governance has hampered success. A chief of cardiology noted, *“We are the barrier to wider implementation of the VNA because we don’t have any governance or initiatives within our organization to implement it.”*

## Enterprise Imaging Governance Structure

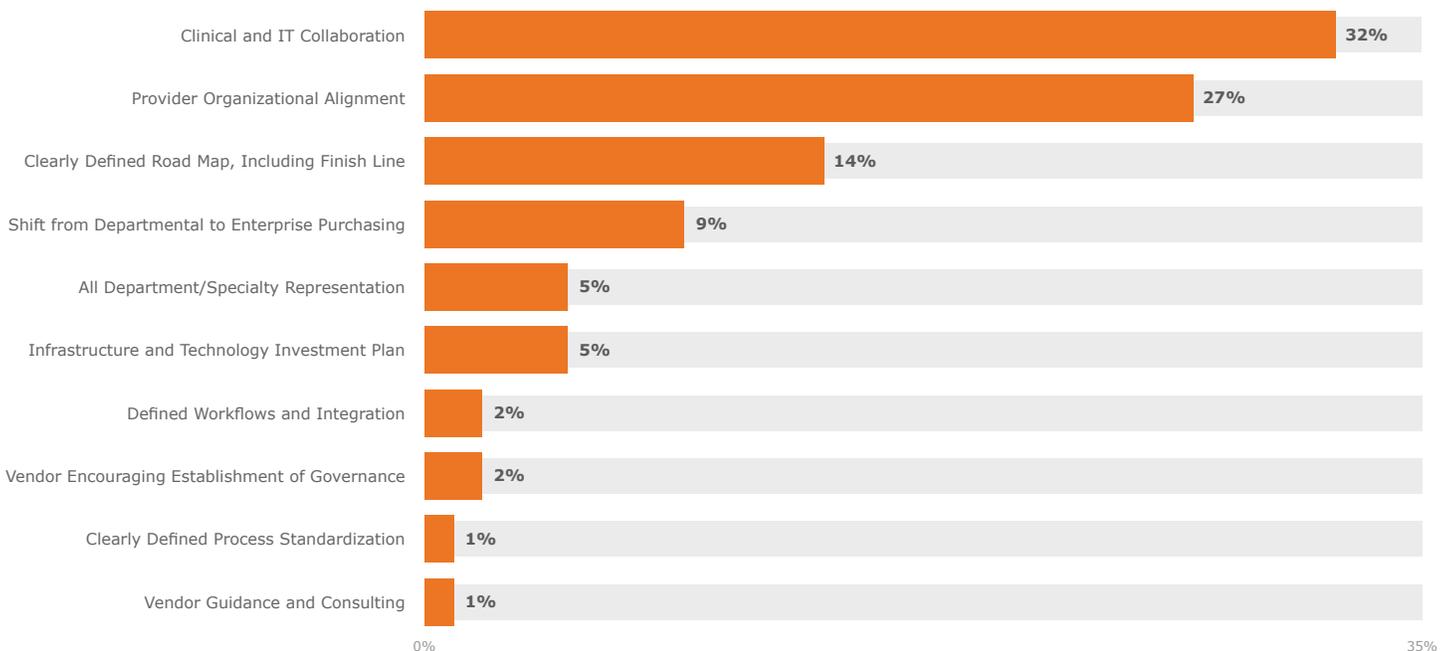


As governance progresses from nonexistent to departmentally focused to organizationally focused, the number of outcomes providers report increases. Because each provider’s goals and structure are unique, the specifics of governance from organization to organization vary.

However, providers and vendors identified several guiding principles and questions that can help create successful governance in several contexts.

The **first** guiding principle identified was the need for close collaboration between clinicians and IT staff. Suggestions for improvement in this area included creating a common vision among stakeholders, IT rounding to better understand enterprise imaging, and participation of C-level individuals responsible for technology. The **second** important takeaway was the need to create greater alignment within provider organizations. Here, providers and vendors pointed to C-level, medical director, and specialty buy-in; aligned purchasing and funding strategies; and a strong steering committee as ways to help drive alignment. **Thirdly**, a clearly defined road map is key. This includes setting targets, goals, and finish lines to celebrate along the way. Several other recommendations were discussed and are shown below.

## Which Will Have the Greatest Impact on Governance Success? (n=49)

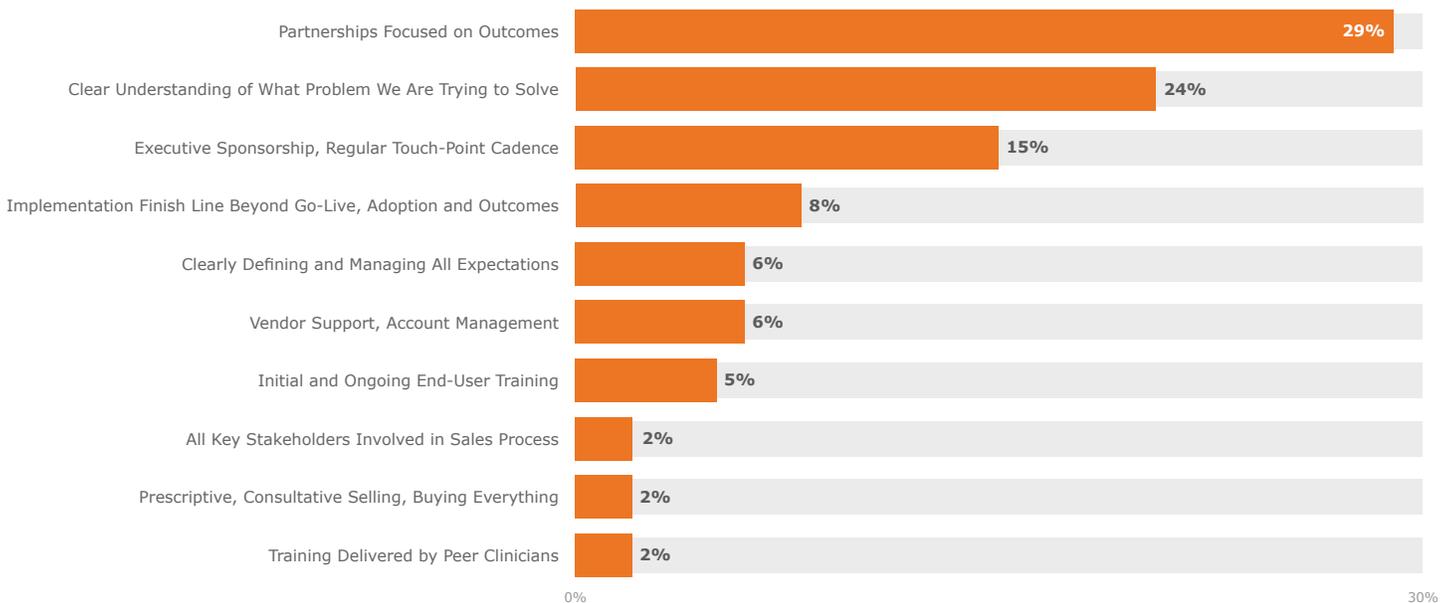


# Delivery

Delivery is the operational practices of a vendor that ultimately are tied to their customers' success. The principles that successful vendors abide by can be seen at work not only in imaging but across healthcare IT in general. Providers can help support their vendor(s) by communicating clearly and often and being open to difficult discussions that will benefit both parties in the long run.

During this discussion, the importance of having a strong partnership was stressed repeatedly as key to successful delivery. Several of the most impactful ways this can be achieved are as follows: The **first** suggestion for developing good partnerships was to have providers and vendors focus jointly on outcomes. This provides a common vision that helps facilitate additional conversations about governance, deployment plans, implementations, etc. A **second** important guideline was for providers and vendors to develop a clear understanding of the problem they are trying to solve. This also includes communicating the problem to all stakeholders within the provider organization itself (e.g., C-levels, IT, individual departments, etc.). **Third** was the need for vendors to provide strong executive sponsorship and regular touch points to drive collaboration and foster deeper partnerships.

## Which Will Have the Greatest Impact on Delivery Success? (n=53)



In addition to the suggestions listed above, KLAS has identified several key elements to strong provider/vendor partnership and delivery. These elements were identified as part of confidential interviews with 50 vendors to understand how they approach sales, training, and support. When their answers were correlated with their customers' satisfaction, several best practices or guiding success principles emerged:

### Prescriptive Selling

The best predictor of customer satisfaction is how a vendor sells to their customers. There are three primary types of selling: à la carte, packaged, and prescriptive. In an à la carte model, customers can pick and choose what modules, level of support, training, and other aspects of the solution they wish to purchase, regardless of how their choices may limit their success. On the other end of the spectrum is prescriptive selling. Vendors who sell prescriptively have a deep understanding of each customer and a clear view of what success looks like. This allows them to prescribe the modules, interfaces, training, services, and other elements that they know will lead to a customer's success. Beyond simply prescribing the recipe for success, prescriptive vendors are principle driven and are willing to walk away from a potential customer if they cannot foresee success. Vendors who sell this way tend to have customer satisfaction a full 12 points higher than those who sell à la carte.

### Strong Implementation and Training

Another factor that affects customer success is training. Many vendors offer training as part of an initial install, but vendors who consistently drive high customer satisfaction prescribe rigorous ongoing training focused on driving usability and deep adoption. This ongoing training ensures that, as use of a product or product suite expands, all new users are making full use of the available functionality, they are using the tools in the optimal way in order to achieve outcomes, and the organization is receiving their money's worth.

The importance of strong training is reinforced by the KLAS Arch Collaborative research that looks at clinician satisfaction with their EMR. The Arch Collaborative research shows that provider organizations can improve their experience by ensuring that end users are making training a priority by requiring users to complete a proficiency test, requiring that clinicians complete a certain number of hours of training, and incorporating training into departmental meetings.

### Strong Relationship

Another key to success is a strong relationship. Service-oriented vendors often leverage account management to drive customer success. Providers, particularly those working in complex spaces such as enterprise imaging, benefit tremendously from having contacts that understand their organization's structure as well as their goals. It should be noted that not all account management is created equal. Account management that truly makes a difference requires that account managers and other supporting staff on the vendor side be truly empowered to break down barriers for their customers.

# Outcomes

The goal of any enterprise imaging strategy is to achieve outcomes, whether they are around efficiency, cost, collaboration, security, or patient care. Vendors need to have a clear understanding of what customers hope to achieve (i.e., both implicit and explicit expectations) and clearly communicate which outcomes the vendor can deliver on and what the expected delivery timeline looks like. The desired outcomes outlined in the 2017 KLAS Enterprise Imaging Summit (held last year) included:

## Cost Savings

- Decreased duplicate studies
- Decreased costs for duplicate archives
- Improved ROI

## Improved Care

- Improved patient care
- Improved patient engagement

## Data Management and Security

- Decreased duplicate studies
- Decreased data loss
- Improved data management
- Improved data security

## Physician Productivity

- Improved efficiencies
- Improved clinician collaboration
- Improved physician satisfaction

## Improved Analytics

## Interoperability and Integration

- Improved interoperability
- Adherence to standards

# Conclusion

KLAS will continue to measure the progress of providers and vendors in enterprise imaging in subsequent reports, but the hope is that we as an industry can progress faster and with less pain by avoiding shortcuts and ensuring that outcomes can be achieved consistently. At the end of the summit, Dr. Cheryl Petersilge (Medical Director, Integrated Content at Cleveland Clinic) extended the invitation to the industry (both providers and vendors) to use this white paper as a starting place to foster productive collaboration and build successful enterprise imaging road maps.

# Summit Attendees

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**Massimo Angileri**

VP EMEA, Carestream

**Raz Atanasiu, MBA**

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**Paul Barnes**

Senior Manager, Client Success, Merge, an IBM Company

**John Basile**

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**Sean Bina**

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**Tim Blakely**

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**Carol Corder**

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VP & GM, Healthcare Diagnostic Solutions, Nuance

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**Jim Murry**

CIO, Catholic Health Services of Long Island

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Deputy Director, Johns Hopkins Medicine Technology Innovation Center, Johns Hopkins Medicine

**Sara Osberger**

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**Morris Panner**

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