How a Major Healthcare Provider has Increased Efficiency by Including DICOM Data in their Analytics

Overview

A healthcare provider needed to access data held within the DICOM (Digital Imaging and Communications in Medicine) images so they could view the utilization of the MRI, CT, and X-Ray imaging devices. They had previously attempted to do this by modifying an existing piece of software, but this proved unsuccessful. By working with OmniIndex, they were able to not just access the specific metrics of device utilization, but were also able to view and use the other data held by the DICOM images. Unlocking this data enabled them to add it to their current analytics platforms and gain additional insights including cost savings, patient billing and maintenance schedules.

Introduction

A DICOM Image can be made up from many different types of data. This includes: Patient administration information, Waveforms, Images, Slices of 3-D volumes, Video segments, Diagnostic reports, Graphics, and Text annotations. This is valuable data that can greatly enhance the insights granted through analytics. Our investigation into the healthcare provider's problem showed the system in place was designed for a completely different task and was thus incapable of accessing this data. Realizing this, we started looking directly at what the actual problem was and what both the expected and desired outcomes were from implementing the OmniIndex Digital Imaging Analysis Platform.
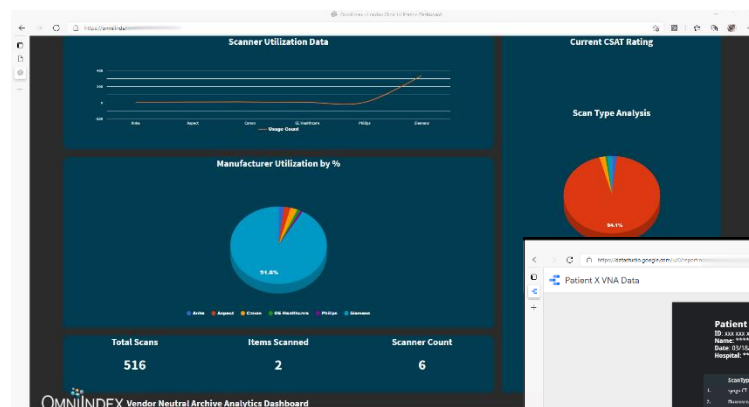
Problem

The key challenge was Scanner & X-ray imaging machine utilization. The use of these extremely complicated and costly pieces of equipment has been difficult to analyze. This is because while the data is logged every time a scan or X-ray is carried out, it is done so within the image. This has made it difficult to access the information for invoice reconciliation and maintenance purposes outside of the imaging applications.

Solution: The OmniIndex Digital Imaging Analysis Platform
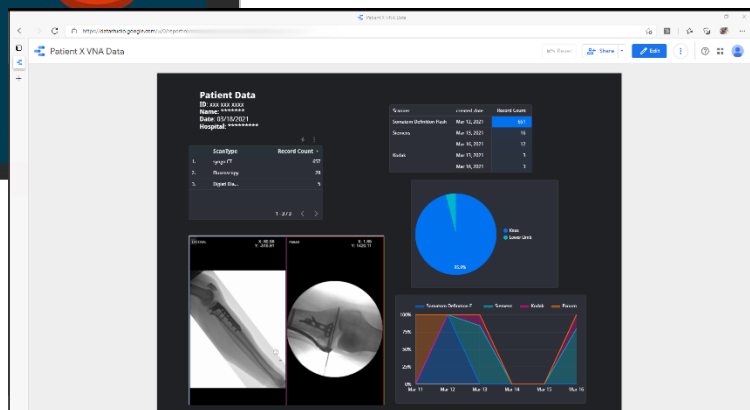
The OmniIndex Digital Imaging Analysis Platform's AI engine can analyze the embedded data within the DICOM images and index it. This enables access to the data through various analytics visualization tools and the OmniIndex Health Dashboard. To do this, the OmniIndex platform extracts:

- **Patient administration information**
- **Diagnostic reports**
- **Text Annotations**

Outcomes

Staff with permissions can now access the information in an easy to view format, enabling new uses for the data that go beyond the device utilization requested.

The OmniIndex API enables the technical teams to integrate the data into their existing office applications, allowing it to be viewed in presentations and spreadsheets. In addition, the Analytics and clinical teams can now use Google Data Studio or Tableau to visualize the results.

In all cases the data is available in real-time and in a format that suits their specific requirements. By having this data available there are clear measurable outcomes:

- **Time saved with billing and invoice reconciliation.**
- **Increased productivity within the IT department who are no longer acting as ad hoc searching coordinators.**
- **Additional metrics to plan new products & services by.**

The first two of these metrics provide direct costs savings, while the third offers potential long-term revenue increase.

Additional Benefits

In addition to being able to access data about utilization, the data team at the healthcare provider can now securely gain insights into clinical data. This includes details on what diagnostic images were taken, how many were taken, who took them and when. This unlocks a complete data picture of what is happening at any point in time. The feedback from the team states this has led to a more detailed plan for future investments and staff hires.

Where to get the OmniIndex Digital Imaging Analysis Platform

The OmniIndex Digital Imaging Analysis Platform is available to use in three ways:

1. On-Premises installation with a Virtual Machine.
2. Oracle Cloud Marketplace implementation within your own tenancy.
3. SaaS offering directly from OmniIndex or via the Oracle Cloud Marketplace.

For those organizations with their own dedicated infrastructure, our Virtual appliances will load directly into your virtual infrastructure allowing you to host the platform within your own dedicated data center. For other organizations, our Marketplace instances install within your own tenancy and you can be running reports within 15 minutes. If you do not have a dedicated technical team or just prefer SaaS applications, the OmniIndex SaaS Platform is a secure way to manage your analytics. You get a secure sandboxed database schema and platform implementation dedicated to your organization, but no need for management nor added costs of infrastructure.

Our sales and technical teams are available to help you decide which solution suits your needs. They can be contacted on:

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