CitiusTech

ENTERPRISE IMAGING SOLUTIONS AND SUCCESS STORIES

Empowering healthcare providers to digitally revolutionize their imaging services by incorporating AI and intelligent imaging, automating legacy workflows, and enhancing the quality of diagnostic imaging services.

Inspiring new possibilities for the health ecosystem with technology and human ingenuity.

We enable 140+ healthcare enterprises to build a human-first ecosystem – smarter experience, better access, and quality care with deep-domain expertise and next-gen technology.

Today, patients demand better access to equitable care, members expect digital experiences at par with e-commerce and retail, and health enterprises are committed to delivering the same with a digital-first strategy. We act as a catalyst for our clients, dive deep into their business, and unlock the limitless possibilities through technology solutions and services.

Health organizations need to transform and pivot to digital-first connected enterprises. With deep-domain expertise and next-gen digital technology focus, CitiusTech has enabled organizations to drive this transformation for nearly two decades.

100%
Healthcare focused since inception

40%
of Fortune 500 healthcare and life sciences organizations leverage our solutions

8,500+
Healthcare-trained IT professionals

Consistently recognized by top analyst firms in their industry-acknowledged reports

H The Healthcare Technology Report

The Top 100 Healthcare Technology Companies

2022

#2 pure-play healthcare IT & software company

#7 overall

HFS Research

Recognized as a Horizon 3 'Market Leader' in the HFS Horizons - Life Science Service Providers, 2023

Consistently Featured as a 'Star Performer' by the Everest Group

Everest Group
PEAK MATRIX® STAR PERFORMER 2022
HEALTHCARE PAYER DIGITAL SERVICES

Everest Group
PEAK MATRIX® STAR PERFORMER 2022
HEALTHCARE PROVIDER DIGITAL SERVICES

Everest Group
PEAK MATRIX® STAR PERFORMER 2022
LIFE SCIENCES DIGITAL SERVICES

iSG

Positioned as a 'Leader' in ISG's Provider Lens™ for Healthcare Interoperability Services & Solutions

Improving Outcomes with Intelligent Imaging Solutions

As a pure-play healthcare technology company, we are at the forefront of empowering healthcare providers to usher in a new era of digital transformation within their imaging services. With our cutting-edge medical imaging technology services and solutions, we enable healthcare institutions to seamlessly integrate AI and intelligent imaging technologies, automate and streamline legacy workflows, reduce the administrative burden and optimize operational efficiency.

Our commitment to the healthcare industry extends to delivering state-of-the-art solutions that go beyond just addressing current needs, ensuring that healthcare organizations remain innovative, secure, and patient-centric. With our expertise and comprehensive suite of medical imaging technology services and solutions, we are dedicated to helping healthcare providers navigate the digital transformation landscape, allowing them to focus on what matters most – delivering exceptional care to their patients.

Strong Partnerships with Hyper-scalers

Microsoft Partner
Gold Application Integration
Gold DevOps
Gold Data Analytics
Gold Application Development
Gold Cloud Platform
Microsoft

aws PARTNER Advanced Tier Services
- Public Sector
- Immersion Day
- AWS Glue Delivery
- Amazon QuickSight Delivery
- Migration Services Competency
- Healthcare Services Competency
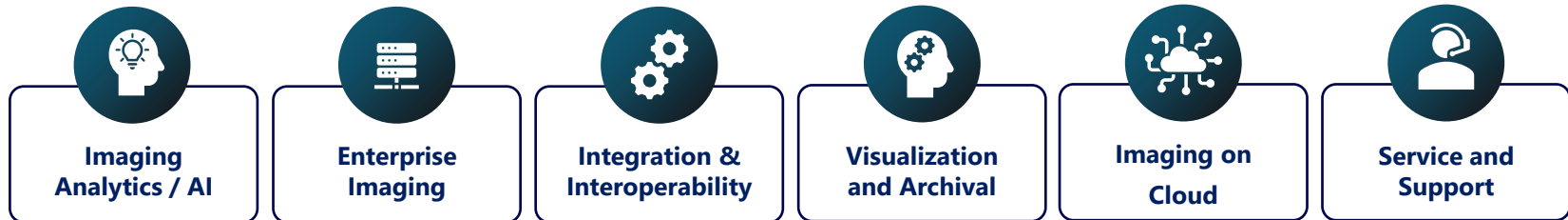- Well-Architected Partner Program

Google Cloud Partner

Solutions Built Around Specialized Offerings -

Interoperability, Clinical Imaging Services, Digital Pathology, Oncology, Mammography

The World's Top 15 Healthcare IT Companies are our Clients

7 of the World's Top 15 Medical Device Companies are our Clients

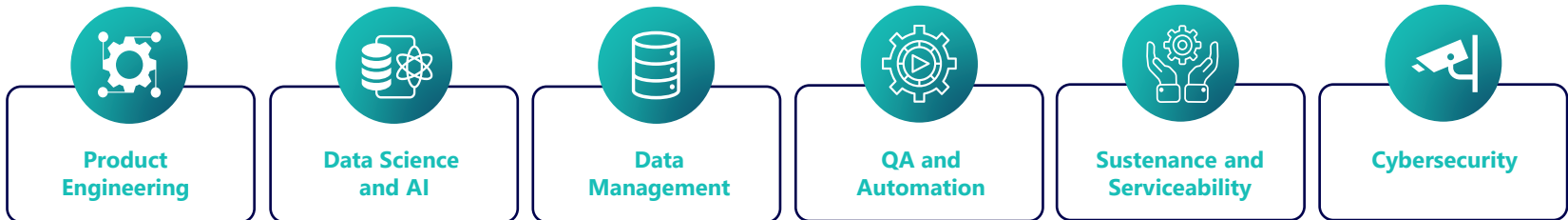**400+** Medical Imaging Experts

400+ Healthcare Cloud Experts

Our Medical Imaging Solutions

We have extensive experience across healthcare ecosystem including MedTech, Life Science & Providers. We are enabling leading healthcare organizations to harness the power of cloud, AI and digital engineering to drive transformation, design efficient workflows and improve clinical decisions.

Imaging Solutions

Imaging Analytics / AI	Enterprise Imaging	Integration & Interoperability	Visualization and Archival	Imaging on Cloud	Service and Support

Tech Services

Product Engineering	Data Science and AI	Data Management	QA and Automation	Sustenance and Serviceability	Cybersecurity

Customer Value

Improved Imaging Services Productivity	Intelligent Radiology Workflows	Improved Care Outcomes	Optimized Clinician Experience	Accelerated GTM Strategies

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Our Digital Engineering Capabilities

We are a partner of choice for digital engineering, offering rapid prototyping and support for building and deploying innovative imaging solutions. We are dedicated to improving imaging workflows, refining image quality, optimizing protocols and doses and enabling hybrid visualization.

Visualization

- Next-gen viewer enablement including Mobile, ZFP, UV viewer etc
- Integration of reports in viewer
- Real-time 3D processing and integration of AV tools
- UX modernization
- AI/ML workflows integration

Product Deployment

- Remote serviceability
- Continuous integration and continuous delivery
- Customized deployment
- Docker and container approach of development and deployment
- L1 – L4 support services

Archiving

- Data aggregation from imaging, clinical, pathology, financial, operational, etc
- VNA & PACS Migration, enablement managing storage and retrieval
- CD/DVD Import solutions
- Distributed storage for cost optimization using long term archival storage on cloud

Enterprise Imaging Workflows

- Seamless access to patient data using Cloud based Imaging solutions
- Longitudinal view of patient data, De Identification
- Third Party Integration
- Custom dashboards to help capture key operational measures

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Our Next-gen Technology Capabilities

We are preferred partners for cutting-edge healthcare solutions, excelling in cloud-based imaging, AI-driven diagnostics, real-world data integration, and digital pathology, all aimed at improving patient care and healthcare processes.

Imaging on Cloud

- RIS/PACS/VNA Cloud enablement
- Protocol standardization on cloud
- Third party AI application orchestration/integration
- Cloud modernization

AI in Imaging

- AI based imaging solutions e.g. worklist prioritization, image pattern recognition, etc.
- Auto Image Segmentation and pattern recognition algorithm development
- Advanced CDSS tools combining multi-modal image analytics and clinical data analysis

RWD Data for Imaging

- Support bulk ingestion of imaging data across multiple trial sites and multiple imaging sources (Radiology, Pathology, etc.)
- Metadata extraction & indexing framework for DICOM / non-DICOM images
- Support for generation of RWE based on imaging data
- Support for DICOM to FHIR conversion

Digital Pathology

- Integration of LIS systems with WSI scanners
- Pathology data storage integration with cloud archives & VNAs (including DICOM)
- Development of viewers to display pathology Images
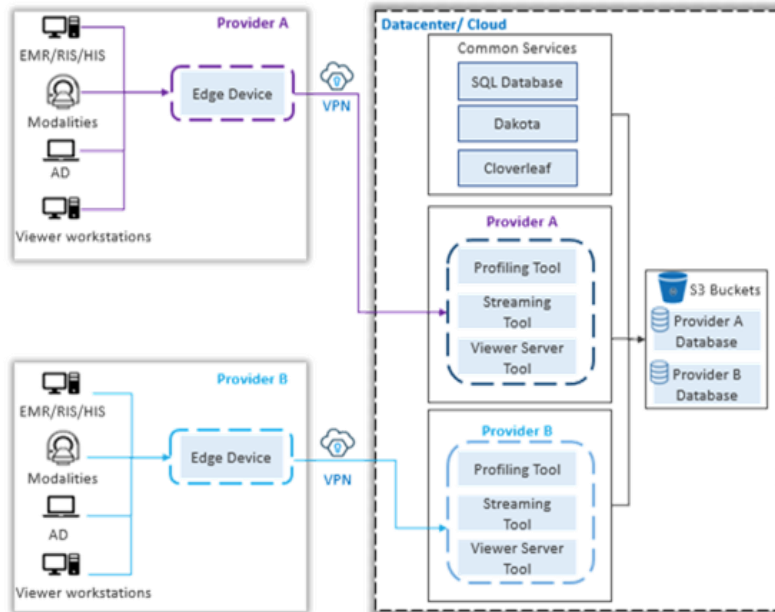
CitiusTech

Explore Our Recent

SUCCESS STORIES

Cloud Enablement for Enterprise Imaging Portfolio

Client Requirements

- Our client, a preeminent Imaging/PACS product and solution provider with a global footprint in healthcare, sought to integrate their existing PACS system and imaging viewer solution in the public cloud and extend their existing product to cater to a burgeoning market segment— independent radiology practices and small hospitals.

Solution Schematic

CitiusTech Solution

- Provided Infrastructure product engineering services to support the application deployment in hyper scaler environments
- Adhered to security standards for cloud enablement
- Created multiple data backup zones for disaster management and faster data access using AZ's
- Monitoring of the cloud infrastructure enabled auto-scalability of the solution as a part of the implementation
- Leveraged Data Management Services for building tightly coupled pipeline data migration from on-prem to cloud
- Data Migration from SQL Server to RDS with DMS implemented to utilize platform services to reduce cost and archive migration without down time

Value Delivered:

- Streamlined deployment/install/ upgrades approach for providers minimizing the site-based customizations
- Stable & simplified deployment helped client in saving service cost and infrastructure management
- Enabled support of multiple-viewers based applications in cloud

Leveraging Medical Imaging Data for RWE

Client Requirements

- The pharmaceutical company, boasting technological prowess in R&D, top-tier drug commercialization, global accessibility, and data science expertise, required CitiusTech to conceive and execute an image management solution.
- This solution was to seamlessly facilitate ingestion, storage, data search, and image annotation within their Real-World Evidence (RWE) data management platform.

Solution Schematic
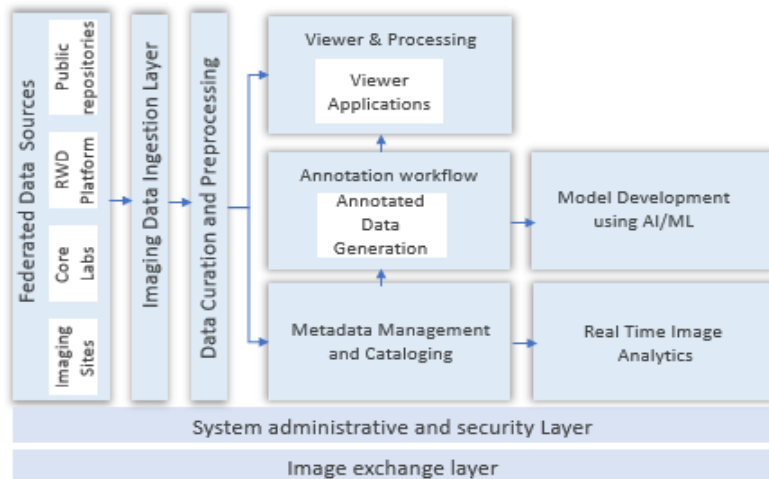
CitiusTech Solution

- Helped set up an ingestion pipeline for DICOM and non-DICOM native data formats
- Standardized metadata using sponsor defined taxonomy and structured codes
- Performed extraction of metadata from DICOM and non-DICOM images and mapped it to FHIR resources to create a systematic approach to metadata cataloging and management
- Automated the quality control process and de-identified the images and metadata
- Designed UX/UI to facilitate data browsing and viewing
- Orchestrated Radiologist workflow for image access through 3rd party viewer
- Exchanged annotated data internally and externally to build cohort for machine learning

Value Delivered:

- Reduced time and effort in acquiring medical imaging data from multiple external real world data sources
- Developed an integrated search solution to provide access to relevant imaging information across the enterprise platform
- Developed a curated imaging dataset which was leveraged for training machine learning algorithms

Remote Implementation & Support of Enterprise Imaging

Client Requirements

- The client, a prominent provider of Imaging/PACS solutions globally, had acquired Image Exchange products and sought a capable partner to support these acquisitions.
- They engaged CitiusTech to deliver Professional Services encompassing Integrated Software Implementation Services and end-customer support.

Solution Schematic
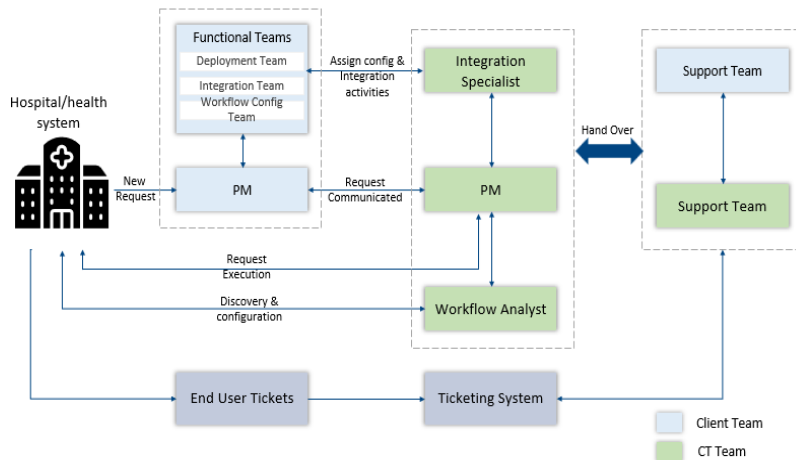
CitiusTech Solution

- Provide project management support for new customer onboarding and implementation
- Set up and configure Smart Worklists and provide end user training for cardiology and radiology applications
- Integration, Configuration for front-end and back-end systems, Troubleshooting for PACS and Universal Viewer applications
- HL7 Interfacing support (Create/Modify/Delete HL7 channels for HL7 transformations and data exchange)
- DICOM Integration support (Migration, DICOM Indexing, PACS integration with other systems, Data manipulations, Auditing)
- Configure and Manage Image exchange gateways and cloud channels to facilitate Image exchange across providers

Value Delivered:

- Accelerated onboarding due to strong prior healthcare domain expertise
- Ability to scale teams with specialized skills (DICOM/HL7/ Clinical) in shorter time frame
- Enabled support of multiple viewer-based applications in cloud
- Managing end-to-end implementation projects

Radiologist Collaboration Platform

Client Requirements

- The client, a forefront provider of groundbreaking medical imaging solutions, required a collaborative workflow enabling multiple users to collectively review a single study in real-time, ensuring enhanced care collaboration and accurate patient diagnosis.
- CitiusTech's technical proficiency and extensive familiarity with the client's codebase made it the partner of choice for this critical initiative.

Solution Schematic
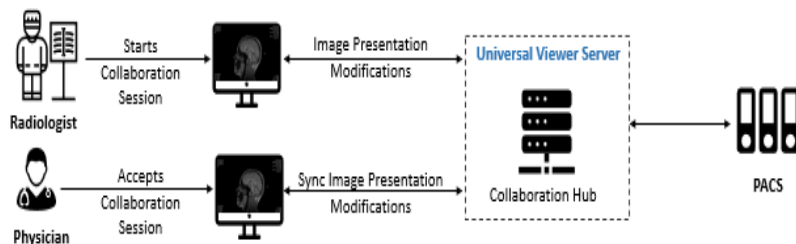
CitiusTech Solution

- Designed & developed messaging hub module to enable collaboration workflow across multiple viewers displaying the same study
- Implemented various collaboration commands to synchronize all viewers for user actions like layout change, mouse movement, image level operations (WWL, zoom, pan) and annotations
- Supported a feature where each user will have a "laser pointer", a graphical representation of the mouse cursor that is visible to all participants in the collaboration session, with unique color to indicate an area of interest or inquiry
- Developed an automation framework to test the developed features & workflow
- Tested application performance to ensure real time synchronization across multiple viewing sessions

Value Delivered:

- Developed messaging infrastructure based on Microsoft ASP.NET SignalR library
- Enables meaningful peer review practices in real time to reduce diagnostic errors and improving patient care

AI-Enabled Intelligent Worklist

Client Requirements

- The client, an eminent provider of diagnostic imaging software, reached out for CitiusTech's assistance in augmenting the Radiologists Worklist.
- The enhancement entailed supporting multiple grid views for various modalities. The requirements included implementing features like context menus, thumbnail series picker, the ability to alter study status, and the capability to rearrange grid positions.

Solution Schematic
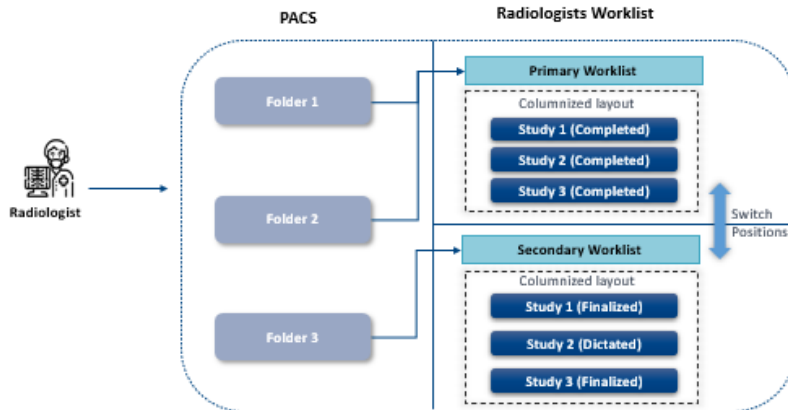
CitiusTech Solution

- Added an option in PACS to select a particular folder of studies to be viewed in primary grid & another folder under secondary grid
- Added features such as right click context menu, thumbnail series picker for primary and secondary grid
- Enabled synchronization of Study status and related information between the primary and secondary grid views for studies that appear in both
- Added a feature for users to choose to view only one grid (primary) if needed
- Provided options such as to swap the positions of the primary and secondary grids based on their preferences or to make primary grid as secondary grid & vice versa
- Incorporated a feature that allows users to save column preferences, including column order and the number of columns, separately for both grids

Value Delivered:

- **Enhanced user interaction** by navigating between different folder views without having to switch between the folders every time
- **Improved Flexibility** by providing different layout options
- **Ensured consistent data management**, and making it convenient to work with multiple studies
- Helped to **highlight priority items** by customizing study selection

Imaging AI Orchestration Platform

Client Requirements

- The client, a leading supplier of diagnostic imaging software, necessitated CitiusTech's assistance to augment the Image Viewer.
- The client needed enabling support for AI scanning through preconfigured algorithms and to showcase the analysis (findings) delivered by the AI algorithm alongside annotations and measurements within the viewer.

Solution Schematic
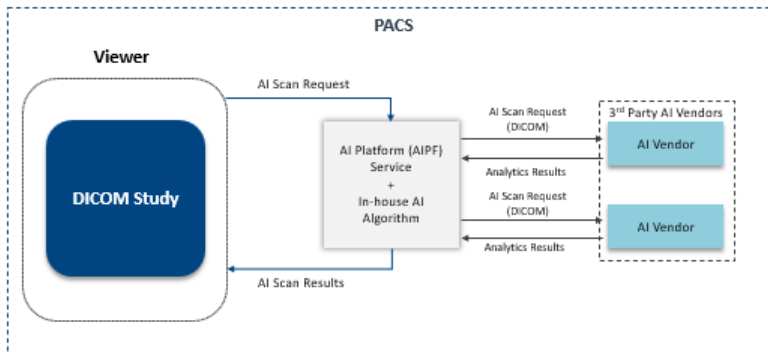
CitiusTech Solution

- Provided option in PACS to configure and integrate AI algorithms from various vendors, including the client's in-house AI algorithm.
- Helped in automating AI algorithm selection for medical imaging based on modality, coupled with preconfigured algorithms for specific medical condition
- Displayed the Computer-Aided Detection (CAD) findings feature on the Image Viewer and presented alongside other annotations, measurements, and relevant information
- Enabled users to turn on or off the presentation of AI-generated insights, and can accept or reject the AI findings
- Added option to toggle between multiple findings and view it across multiple frames and tiles
- Added a feature to add notes at study level in case the AI findings are available

Value Delivered:

- Streamlined diagnostic process by automating the modality-based selection of AI algorithms
- Improved the process by toggling between multiple AI findings, accept or reject them, and add contextual notes
- Improve flexibility by giving different vendors option and preconfigured algorithms
- Provided Comprehensive view with AI findings alongside with their own annotations and measurements across multiple frames and tiles

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HEALTHCARE
LIMITLESS