

# Glassbeam for Healthcare

## Driving Clinical Insights with Machine Data Analytics

### Breakthrough solutions for healthcare providers

Most clinical engineering and imaging operations lack of visibility and predictability into machine performance, equipment utilization and referral patterns drive a high degree of reactivity.

That's why diagnostic imaging operations is one area that benefits from consolidating the data from a diverse array of equipment and then analyzing the data to predict failures, create proactive programs to realize full utilization and staff for an effective and efficient operation.

Clinsights™ is an Artificial Intelligence (AI) based solution which utilizes data analytics to optimize machine uptime and utilization of high-end imaging machines.

We provide real time proactive, predictive and prescriptive insights for machine servicing and comprehensive information to optimize staffing and patient scheduling for hospitals, clinics and private radiology groups.

### Benefits



#### Increase Revenue Growth

Improve visibility on fleet wide utilization metrics, optimize capital planning and staffing decisions, and hours of operation that in turn increase machine usage analyze logs and perform root cause analysis



#### Improve Clinical Outcomes

Reduce unplanned downtimes, minimize negative impact on scheduling and delivery of clinical procedures, reduce patient anxiety and driving higher customer satisfaction



#### Enhance Patient Experience

Reduce wait times, avoid rescheduling and travel to another facility that negatively impacts patient experience and promotes revenue leakage



#### Reduce Operational Costs

Avoid unplanned machine and parts failure, minimize repair costs (parts and labor), and remove dependence on expensive repair & maintenance contracts from OEM



## Trends and Challenges

### Healthcare Consumerism: Transforming Delivery of Care

Transforming delivery of care is a major factor in meeting the expectations of patients for convenience and quality.

Technologies like AI and analytics enable service providers to optimize and coordinate patient-centric care. Analytics enables the automation required to consistently deliver quality-on-demand. Quality-on-demand is the key to consumer satisfaction, trust, and loyalty.

The challenges facing today's Healthcare delivery of care are straight forward:

- Meet the demands for accessing medical images through preventive data driven actions
- Operate as cost-efficiently as possible by increasing patient throughput
- Deliver quality-on-demand with increased machine uptime

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"MultiCare organization strives to get realtime operational alerts and notifications on its vast imaging fleet of MRI and CT scanners, and to increase machine uptime and reduce patient disruption at our facilities."

**Bradd Busick**, SVP-CIO, *MultiCare Health System*



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"Utilizing AI/ML to leverage complex machine data from healthcare imaging equipment alone will provide \$11.1B in revenue value by 2022. Glassbeam's capabilities directly address the bulk of this opportunity."

### Harbor Research Report,

*Data Transformation Drives Machine Intelligence Healthcare*



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"We adopted what we consider a gamechanging AI/ML solution to help us facilitate service management, asset utilization and performance improvement solutions, all as part of our 2020 strategic goals."

**Ramana Sastry**, Director Clinical Engineering, *UCSF Health*

## The Glassbeam Advantage

The Glassbeam solution, powered by AI/ML, is a game changer for the healthcare industry by dramatically shifting the economics of a typical facility's machine downtime ratios between unplanned and planned windows.

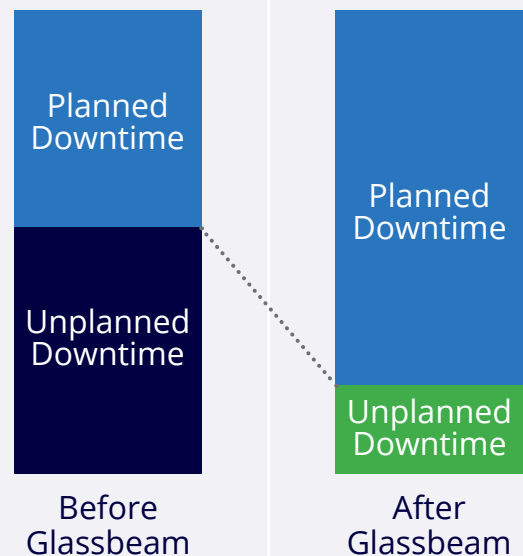
This shift happens by providing "smart maintenance" with proactive alerts, predictive notifications, prescriptive recommendations, driven with an AI/ML and Rules engine.

Business impact is clearly visible by moving over 80% of downtime, largely unplanned, to less than 20%, providing more than 45 hours of additional billable time per machine per year, resulting in over \$4 million of new revenues over 3 years for a site with 10 MRIs and CTs.

Specific examples of business impact include:

- Improving machine uptime for MRI and CT Scanners from 97% to 99.9% uptime resulting in \$4M recovered revenues over 3 years
- Cost savings of over \$900,000 over 3 years at a site with 15 machines by providing proactive failure analysis on Cryogen levels in MRIs and Tube replacements in CT Scanners
- Over 40% reduction in mean time to resolution (MTTR) for service tickets leading to higher machine time, avoiding multiple instances of cryogen refills and alerting on potential quenches

### Converting Unplanned Downtime to Planned Maintenance Windows



## How Does Glassbeam Help You? By providing predictive insights and nudging proactive behavior

### Service Analytics Module

Clinsights Service Analytics enable heads of Clinical Engineering departments and bio-med engineers to perform remote monitoring on key machine parameters such as helium level, magnet pressure, cold head temperature compressor status, tube arcs and aborts on a per machine basis.

Key capabilities include:

- supplying proactive and predictive alerts on part and system failures
- performing root cause analysis with logs
- building a knowledge base of key error types
- creating dashboards on demand

### Utilization Analytics Powered by AI/ML

Glassbeam's Utilization Analytics allow heads of radiology groups to track asset utilization across the entire fleet of multiple OEM products and modalities, with drill downs based on procedure type, procedure duration, uptime and idle time. This feature combines utilization and uptime data to ensure inventory is being used optimally, while identifying critical uses to maximize uptime and generate key dashboards.

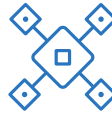
Dashboard examples include:

- referring physician analysis by protocol usage
- patients with repeat exam analysis
- procedure analysis by systems and technologists



### Single pane of glass

Provides consolidated data from multivendor, multi-modality fleet



### Service Management integrated with Asset Utilization

Provides one seamless flow for the entire IDN with drill downs into individual facilities and assets



### Machine learning algorithms triggered alerts

Based on anomalous values on various types of sensor and log data



### Remote Access (screen sharing)

Enables engineers to view/analyze logs and perform root cause analysis



### Secure and Compliant

Firewall friendly and secure; encrypted web sockets, audit trains SSO, RBAC and 2FA



### Agentless, deployed on single VM

Sends logs, tickets, DICOM, HL7 messages via secure connection to Glassbeam cloud

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“At Canon Medical, our priority is to support our customers and their patients by providing Service solutions that help them face the challenges of today’s healthcare environment, including operational efficiency and productivity. With Clinsights from Glassbeam, we can arm our customers with insights about how they are using their systems, and facilities can apply this information to enhance efficiencies that benefit their organization and patients alike.”

**Dominic Smith**, Vice President, Service Field & Sales, *Canon Medical Systems USA*

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“The ability to proactively and predictively manage CT and MR equipment maximizes clinical uptime, which is so crucial to our client’s patient-centric business mission. Glassbeam Clinsights™ remote monitoring and analytics offerings are not only key differentiators for us against the competition but also assures the highest decile imaging equipment uptime for our highly valued client base.”

**Alan Moretti**, Vice President, Advanced Imaging and Radiation Oncology, *RENOVO Solutions*

#### About Glassbeam

Glassbeam is disrupting the status-quo as a comprehensive fleet-wide analytics solution for analyzing machine uptime and utilization data in a single pane of glass. We are the premier machine data analytics company bringing structure and meaning to complex data generated from any connected machine in the Industrial IoT industry. Our next generation cloud-based platform is designed to transform, analyze, and build Artificial Intelligence applications from multistructured logs, for proactive/predictive maintenance. We proudly partner with Smart hospitals to provide a true competitive advantage in delivery of care.

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