

Decoding Applied Observability

Guide to Optimizing IT for Business Excellence



The Imperative of Observability in an Era of Accelerated Disruption

The 2024 KPMG technology survey found that while 88% of US businesses report improvements in profitability and performance from digital transformation, 81% express difficulty in keeping up with the pace of change. To adapt to perpetually evolving markets and technologies, businesses need to constantly optimize their IT to stay relevant, improve adaptability, & enhance profitability. Fueled by this pursuit, businesses today, are leveraging diverse IT environments to run the simplest of applications. This, in turn, has made IT infrastructures more complex than ever, making them highly susceptible to downtime, performance inefficiencies, and broken customer journeys. These factors have elevated the need for observability from a technical nicety to a crucial imperative for success.

Observability Decoded

Dubbed the next generation of monitoring, observability empowers businesses to gain fine-grained visibility into the entire IT infrastructure. It does so by inferring the internal state of the system based on the external outputs, enabling organizations to gain actionable insights into the performance and behavior of applications, services, and systems. With observability, organizations gain the ability to proactively monitor and analyze real-time data for identifying issues, troubleshooting problems, and optimizing performance. Unlike traditional monitoring that collates and analyzes predetermined data from individual sources, observability provides a holistic view of the entire IT ecosystem by centralizing business and IT data, enabling organizations to make data-driven decisions.

Limitations of Traditional Observability

While observability overcame the hurdles of traditional monitoring, its efficacy in the fast-evolving digital landscape is dwindling. With high-velocity innovation, 24x7 business continuity, and seamless customer experiences becoming the norm for surviving in the digital business landscape, organizations are required to stay a step ahead by not just resolving IT bottlenecks faster but preventing them before they occur.

Traditional observability suffers from the following limitations:

Restricted Visibility

Observability goes beyond monitoring to leverage fine-grained data such as metrics, logs, and traces to provide individual insights related to a specific IT

component. However, this creates data source silos, providing a disconnected view of the problem by hindering visibility into interdependencies among different IT components. For instance, let's consider an e-commerce application that crashes at checkout during peak loads with sporadic errors. While the application teams can quickly investigate the logs to point out that the bottleneck is due to some database errors, the database metrics might not reflect any errors. This can result in a time-intensive manual analysis of datasets across the two sources, which can delay troubleshooting and identification of the root cause of the issue.

Alert Overload

With IT infrastructures scaling across multiple environments, observability tools generate high volumes of diverse data. This makes it challenging to effectively filter and prioritize the relevant information from the extensive data deluge for action. In addition, the vast influx of metrics, logs, and traces can trigger alerts for minor fluctuations and irrelevant data, making it difficult to distinguish real threats from background noise. The resultant alert fatigue can desensitize IT professionals and hinder the timely mitigation of critical errors.

Reactive in Nature

While observability accelerates issue resolution by helping identify the root cause accurately, it does so only when an error has occurred. In today's fast-paced environment, this reactive response can lead to costly outages, competitiveness loss, and missed opportunities.

Lack of Historical Context

Traditional observability fails to take historical data & context into consideration. This restricts the identification and analysis of long-term trends and limits predictive performance, experience, and cost optimization.

Restrictive Collaboration

Traditional observability requires organizations to manually sift and analyze data to understand the system's intricacies for effective decision-making. With the process involving analyzing complex observable data, the approach limits decision-making to only skilled resources who can navigate complex data. This restricts collaboration between stakeholders and limits organizations from aligning IT with business and user experience goals.

Applied Observability: The Next Frontier in Building Reliable IT

Observability tools and platforms is a \$2.4bn market, according to industry research firm MarketsandMarkets, and is forecast to grow to \$4.1bn by 2028, driven by IT's move to DevOps and SRE practices and the growing complexity of IT infrastructure. Observability has emerged in the last decade as one of the hottest topics in IT operations management. Applied observability builds on the foundation of traditional observability by leveraging real-time and historical observability data such as metrics, events, logs, traces, API calls, and end-user actions sequencing in an integrated and orchestrated way to enable data-driven decision-making across business and IT operations. The processed information offers invaluable and actionable insights into complex IT and end-user experiences, paving the pathway to accelerate error-free innovation, enhance digital reliability, and improve customer centricity.

A great instance of applied observability is the credit score calculation employed by the Credit Information Bureau (India) Limited (CIBIL), a key parameter used by Indian banks to gauge the creditworthiness of borrowers. For years, the organization has been processing large volumes of historical banking and BFSI data to streamline operations across mortgage lines, helping financial services boost performance. To accomplish this, it captures multiple data sets of different formats and frequencies, co-relating them in real time with historical data in a resilient and scalable manner. Simply put, the process takes what is happening right now and infuses it with the historical context of a banking customer to deliver instant actionable intelligence for loans and other financial services.

Foundational Elements for Effective Applied Observability

According to Gartner, the three essential components to consider for effectively harnessing applied observability are:

Democratized Opportunity

To overcome the limitations of traditional observability, organizations should democratize the availability and assessment of observable data to all teams and stakeholders across the organization. With every organization having massive amounts of observable data, the challenge lies in transforming it into a strong set of capabilities, especially across different departments and operational aspects.

Multiple Concurrent Data Layers

Observable data is generated across the organizational spectrum, including infrastructure operations, middleware, applications, data, functional workflow, and business process layers. Identifying and integrating these data layers across different parts of the organization is essential to gaining holistic actionable insights for proactive decision-making that aligns IT with business goals. While the business and IT stakeholders of each of the layers may already be exploring the various observability elements, bringing them together yields greater value.

Implementation

Implementing applied observability requires combining multiple parallel layers to unearth holistic business and IT insights. The journey to accomplishing this feat can be difficult, complex, & time-intensive. However, organizations can achieve this by breaking down the implementation into manageable incremental chunks with a solid strategic plan or organizational blueprint.



Applied Observability: Unleashing Accelerated Innovation with Enhanced Reliability

As the rapid evolution of technology intensifies, businesses are generating vast amounts of observable data from various sources. Applied observability harnesses current and historical data by leveraging sophisticated platforms and techniques to extract valuable insights for meeting the needs of business and IT stakeholders. According to Gartner, by 2026, 70% of organizations that successfully adopt applied observability will reduce decision-making latency, gaining a significant competitive advantage in their respective industries.

Empowering organizations with intuitive exploratory resources, applied observability enables businesses to unlock:

Improved Scalability

Backed by continuous insights from ever-increasing volumes of observable data, applied observability enables the identification of the most relevant service-level indicators and objectives based on company-specific business strategies. This combined with its predictive defect detection empowers organizations with the agility to proactively optimize digital ecosystems for resource allocation, service improvements, capacity planning, and user experiences at scale

Enhanced System Reliability

Applied observability provides end-to-end visibility into complex microservices architectures and cloud-native

systems, simplifying the identification and troubleshooting of issues across interconnected components. It supports controlled chaos experiments, allowing organizations to inject simulated failures and use observability data to understand potential impacts and improve system resilience before real-world problems occur. The proactive identification and resolution of IT bottlenecks helps businesses deliver uninterrupted experiences at peak loads.

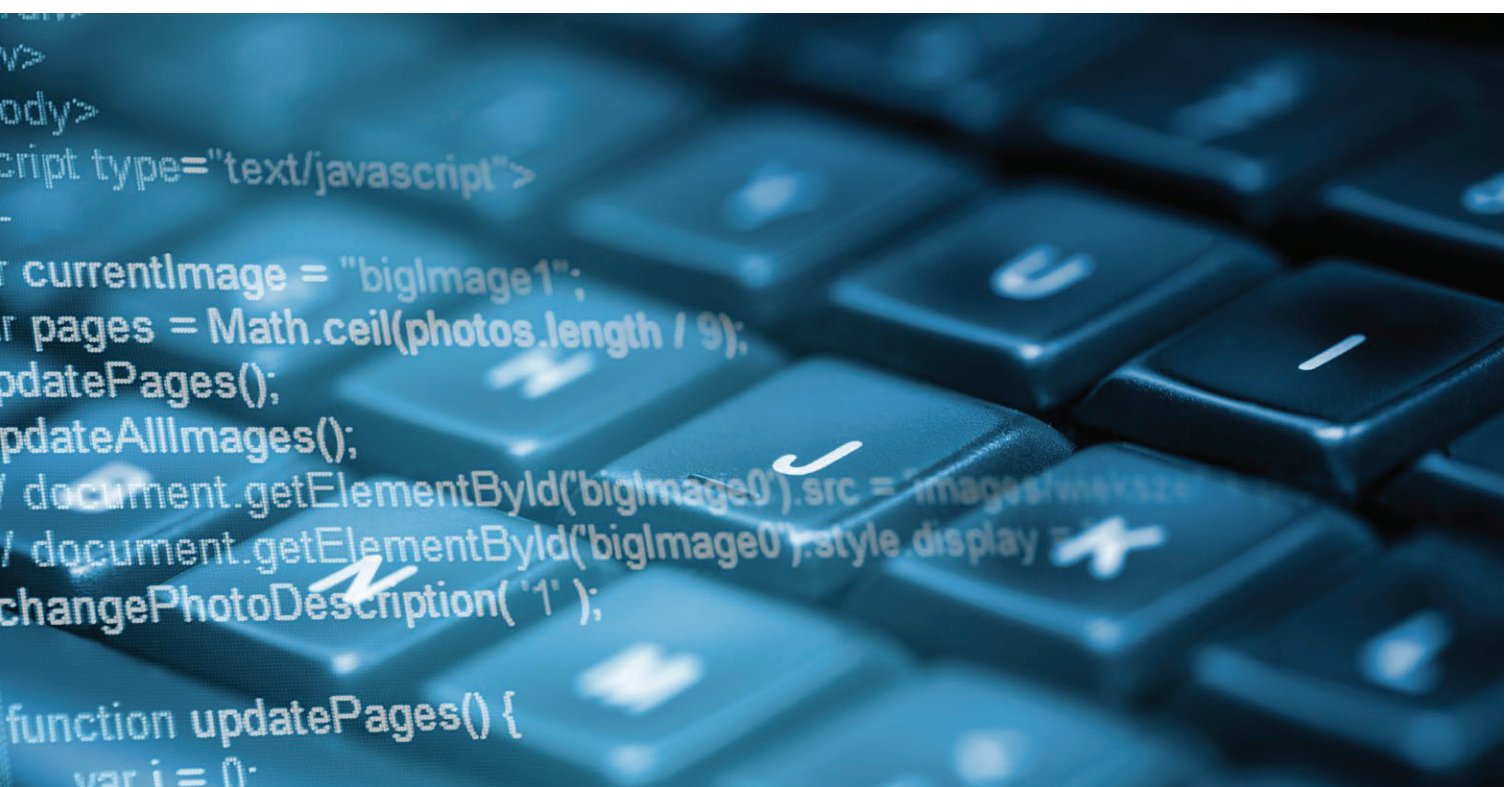
Improved Customer Experiences

By combining data from business and application layers, applied observability enables real-time monitoring of user interactions across touchpoints, pinpointing performance bottlenecks and proactively resolving problems that negatively impact user experience. The real-time user interaction and journey insights also enable the delivery of personalized customer experiences for greater satisfaction and retention.

Accelerated MTI & MTTR

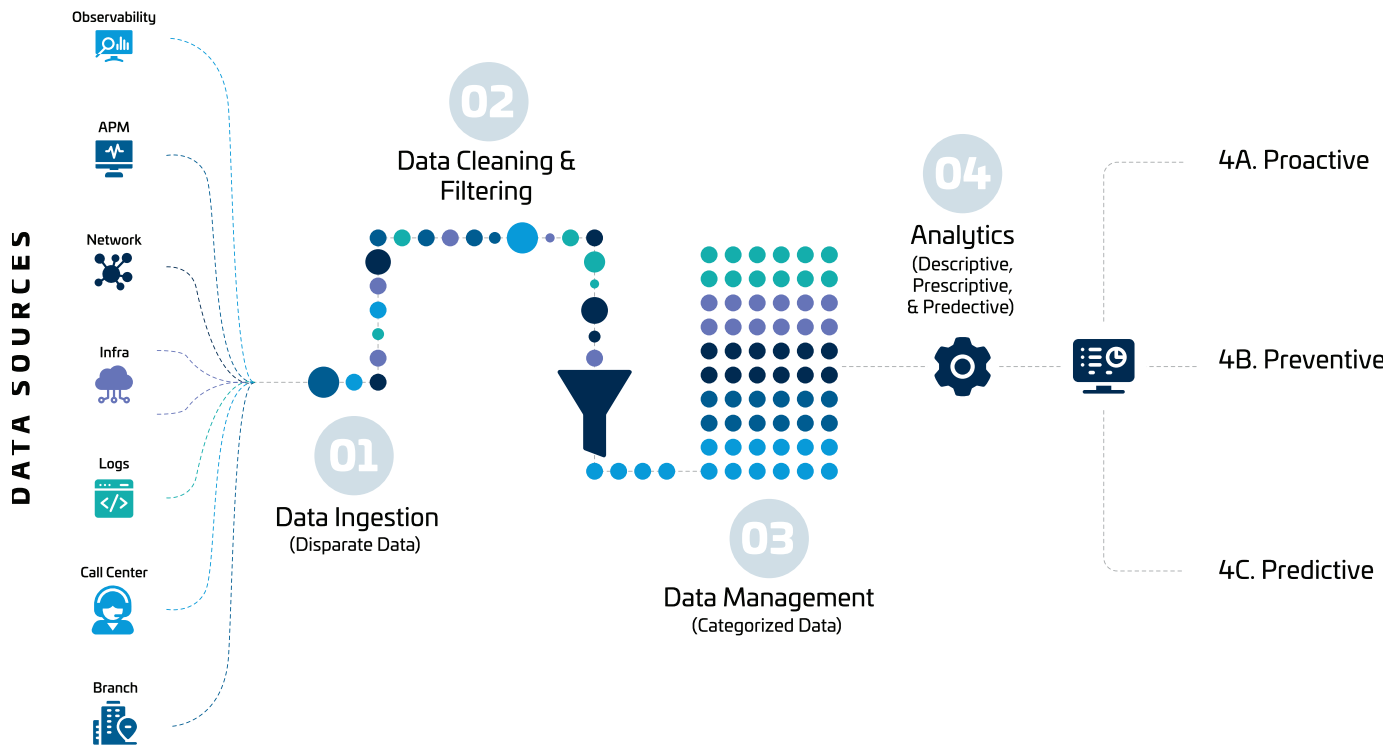
Applied observability's pattern recognition supplemented by automation accelerates the identification and resolution of issues. The combination enables the application of automated root cause analysis, anomaly detection, and incident response workflows to significantly reduce MTI and MTTR.

Quantifiable Impact: Studies have shown that applied observability can reduce MTI by up to 80% and MTTR by up to 50%, leading to minimized downtime, enhanced customer experience, and improved operational efficiency.



QualityKiosk's Applied Observability Solutions

At QualityKiosk, our applied observability solutions are driven by Anabot – our proprietary AIOps platform. With Anabot at the core, we leverage a comprehensive framework to enable applied observability for predictive, proactive, & preventative issue resolution across complex IT estates:



Data Instrumentation

We deploy monitoring & observability tools across distributed IT, instrumenting the collection of relevant data for gaining actionable insights into end-to-end system behavior. This includes data from applications, infrastructure, & user interactions.

Centralized Data Ingestion & Processing

Our proprietary AIOps platform, Anabot, simplifies non-intrusive data collection and centralization from various sources, such as logs, metrics, and traces by capturing millions of events from the ecosystem.

AI-Driven Data Analytics

Combining machine learning, automation, and big data, Anabot analyzes the collected data to enable predictive issue detection and resolution

Hypothesis-driven Issue Identification

Harnessing the data for insights, we leverage a hypothesis-driven approach to problem-solving, identifying performance, scalability, and experience bottlenecks based on real-time data rather than preconceived notions and assumptions.

Data Visualization

We then simplify data-driven decision-making through intuitive and customer-specific data visualization dashboards and alerts, accelerating Mean Time to Identification (MTTI) and Mean Time to Resolution/Recovery (MTTR)

Data-Driven Automation

With AI-first frameworks, we constantly analyze large volumes of observable data to identify & resolve recurring patterns in application performance, experience, & reliability. Extrapolating this information, we continuously identify and automate issue resolution.

By applying the framework, businesses can unlock:

Enterprise-wide Visibility

Centralizing data from across complex and distributed IT estates, the solution enables you to gain end-to-end visibility across digital ecosystems through a single unified interface. Powered by intuitive and custom system dashboards, it empowers you to mitigate potential issues with data-driven decision-making, combining information from multiple subsystems at a single point.

Extended Automation

Combining big data with AI frameworks, the applied observability solution facilitates pattern identification to enable automation of process mining, root cause analysis, and error resolution. Automation of time-intensive & laborious data analysis frees up resources and allows for their deployment towards furthering innovation & optimizing business-critical processes.

Optimized Resource Utilization

Through effective and intelligent analysis of infrastructure data, the solution empowers you to supplement your teams with actionable insights into resource performance & utilization. With data-driven insights into infrastructure performance, you can dynamically optimize resources for costs, utilization, and user experience.

Enhanced Reliability

By enabling predictive, proactive, & preventative error resolution, the solution facilitates a significant reduction in the Mean Time to Resolution (MTTR) eliminating critical errors that can negatively impact the digital system reliability.

Improved IT-Business Synergy

With centralized analysis of data from across the system, the solution enables the mapping of IT performance to business outcomes and user experience. This enhances collaboration between technical and non-technical teams, empowering organizations to tailor their digital ecosystems to achieve their business goals intricacies for effective decision-making.

Applied Observability in Action: QualityKiosk Helps Leading Indian Bank Harness Observable Data to Fail-Proof Experiences & Transactions

Business Overview

A leading Indonesian bank wanted to streamline customer onboarding and transaction experiences on its first & new mobile and website applications. From onboarding to bill payments and transaction status, the client wanted to optimize the customer journey from end to end for enhanced satisfaction.

Challenge

The customer wanted end-to-end visibility across customer journeys and wanted to personalize experiences at scale. To meet this objective, the bank wanted access to real-time user journey data for accurately identifying critical IT bottlenecks creating friction in the user journey. With its existing monitoring tools running concurrently in silos, the bank needed a unified solution for aligning IT performance with customer experiences.

Solution

Led by Anabot, our AIOps platform, QualityKiosk deployed a custom observability solution for the bank by leveraging the following strategies:

End-to-End Monitoring Deployment

Combining proprietary and external observability tools, we deployed real-time monitoring across the bank's digital ecosystem, providing diverse organizational stakeholders with end-to-end visibility into IT performance & end-user experiences.

Predictive Issue Identification

Harnessing real-time user journey and transaction data, we accelerated investigations for user abandonment & bounce rates, improving mean time to resolution (MTTR) and enabling delivery of personalized customer experiences across channels.

Personalized Customer Support

Analyzing user journey data, we helped the bank proactively supplement customer support teams with intuitive and dynamic dashboards, enabling personalized experiences. The solution enabled the bank to

eliminate complex manual searches for customer dropouts & personalize and tailor their marketing efforts to enhance conversion and retention rates.

Seamless User Experiences

Anabot enabled the bank to analyze and compare diverse key customer experience indicators and metrics while mapping them to IT performance. The insights empowered the client with the adaptability to proactively tailor their experiences for evolving trends and enhancing user journey for experiences.

Business Impact



Future-Proof Reliability with Applied Observability

Applied observability empowers organizations to adapt to the dynamism of the fast-evolving market and technology landscape. By leveraging applied observability practice, businesses can gain valuable insights into their operations, optimize performance, and drive better

Enhanced Collaboration

Anabot simplified complex data analysis, empowering non-technical teams with easy and understandable insights on IT performance and its impact on business & end users. This facilitated seamless collaboration between technical and non-technical development, operations, and business teams, enabling the organization to make well-informed decisions based on customer needs.

outcomes. As technology evolves continuously, adopting applied observability is becoming a non-negotiable imperative for businesses aiming to thrive in the digital age.

To effectively harness applied observability, organizations must adopt advanced technologies to build an observability roadmap, implement robust data analytics practices, and foster a culture of data-driven decision-making.



About QualityKiosk Technologies

QualityKiosk Technologies is one of the world's largest independent Quality Assurance (QA) and digital transformation enablers, helping companies build and manage applications for optimal performance and user experience. Founded in 2000, the company specializes in providing QA automation, performance assurance, Robotic Process Automation (RPA), synthetic monitoring, site reliability engineering (SRE), digital testing as a service (DTaaS), customer experience, Cloud, and data analytics solutions and services. With a strong presence across 25+ countries and an expanding workforce of more than 3000 employees, we enable some of the leading banking, e-commerce, automotive, telecom, insurance, OTT, entertainment, pharmaceuticals, and financial services brands to achieve their business goals.

We have been featured in renowned global advisory firms, including Forrester, Gartner, and The Everest Group for our innovative, IP-led quality assurance QA solutions and services and the positive impact we have created for clients in the fast-changing digital landscape.

Contact us at letsconnect@qualitykiosk.com to schedule an expert consultation to understand how our solutions will help you and take the next step to fail proof your BFSI value chain