



Brochure

OpenText™ AI Operations

Automated AIOps

Automated event and performance monitoring for multi-cloud
and on-premises environments, powered by AIOps

Visibility Up, Costs Down, Business Prioritized, IT Value Shown with OpenText™ AI Operations (formerly Operations Bridge)

Research shows 88% of companies are now using multi-cloud instances but lack visibility into what impacts business. The research also finds that solving business impactful issues takes too long when using Hybrid IT.¹ OpenText™ AI Operations solves these issues, and shows IT's value to the business quickly.

Introduction

IT operations must become a more strategic business partner. As application developers include monitoring as code and adopt their own methodologies, such as Agile and DevOps, IT operations must redefine roles and collaboration methods. What's clear is that newer tools and "processes" must emerge.

Challenges to IT

IT Is Being Redefined

As Hybrid IT and multi-cloud technologies abstract infrastructure and turn applications into services and consumption models, IT is redefined as a service broker.

There Is a Data Explosion

As sensors multiply—showing up in every day devices and across data-centers worldwide—we witness a data explosion. Locomotives have turned into datacenters on wheels and wind turbines become whirling dervishes streaming terabytes of data. Logistics operations redefine how data at the edge is essential to govern modern business processes.

Securing the Vast Quantities of Data

Given the importance of this data, IT operations must collect and guard secured data. This is clearly going to be a time-intensive implementation when diverse toolsets with disparate data stores are being used.

IT Must Provide More Value

IT must furnish more value than simply, "keeping the lights on," and must master the impact of risks that impact businesses. Establishing which IT resource is capable of adversely impacting business users will be a fastidious exercise when performed cross all those tools. This suggests that integration of **all data types** logs, events, metrics, topology, social media into a common data store is vital. Topology, dependency, and service mapping is needed to ensure visibility when any issue is capable of impacting business users and targets.

Required Capabilities

Research shows that many entities still use a large variety of best of breed tools to manage their resources. As primary data sources, they can furnish information vital to each individual domain that is the tool's focus. Accelerated transformation of modern businesses and the need to do more with less defines the requirement for a new, integrated monitoring solution approach to find root cause and then act on the problem. Automated Artificial Intelligence Operations (AIOps) provides analytics across all data types and facilitates IT to address this.

For infrastructure monitor tools, analysts are recommending:

- Prioritize IT Infrastructure Management (ITIM) tools by favorably weighing those offering higher integration and interoperability with broader IT Operations Management (ITOM) tools
- Increase the visibility and understanding of the IT infrastructure
- Improve the accuracy and precision of anomaly detection and alerting

¹ Dimensional Research, *Hybrid Cloud Usage Poses New Challenges for Monitoring Solutions*, March 2018

- Ease troubleshooting and diagnosis
- Reduce outages and increase infrastructure availability
- Integrate with Event Correlation and Analysis (ECA) and legacy tools
- Integrate with AIOps tools for centralized visibility and better analysis

OpenText™ AI Operations provides all these requirements and more. It transforms monitoring to reduce the cost of operations and improve the efficiency of IT operators. It integrates data from over 200 existing tools and technologies, providing that data in a single pane of glass. It combines methods of common data storage for all data types, is based on machine learning, and includes more than 50 patents that are embodied in its AIOps based Big Data analytics.

AI Operations topology discovery provides a better understanding of the IT infrastructure. By building the topology, AI Operations can find root cause faster. It does this by eliminating IT elements that don't participate in the delivery of the service from the troubleshooting process—we call this topology-based event correlation. Business Value Dashboards (BVD) provide transparency of IT to the business.

In addition to integrating various tools into one place, including topology-based event correlation and anomaly detection, AI Operations visualizes the root cause of a problem by listing it as a clickable line item in the console with related problems underneath. Customers have seen as much as an 80 percent reduction in incidents. ChatOps is also supported, which aids in collaboration to solve problems faster.

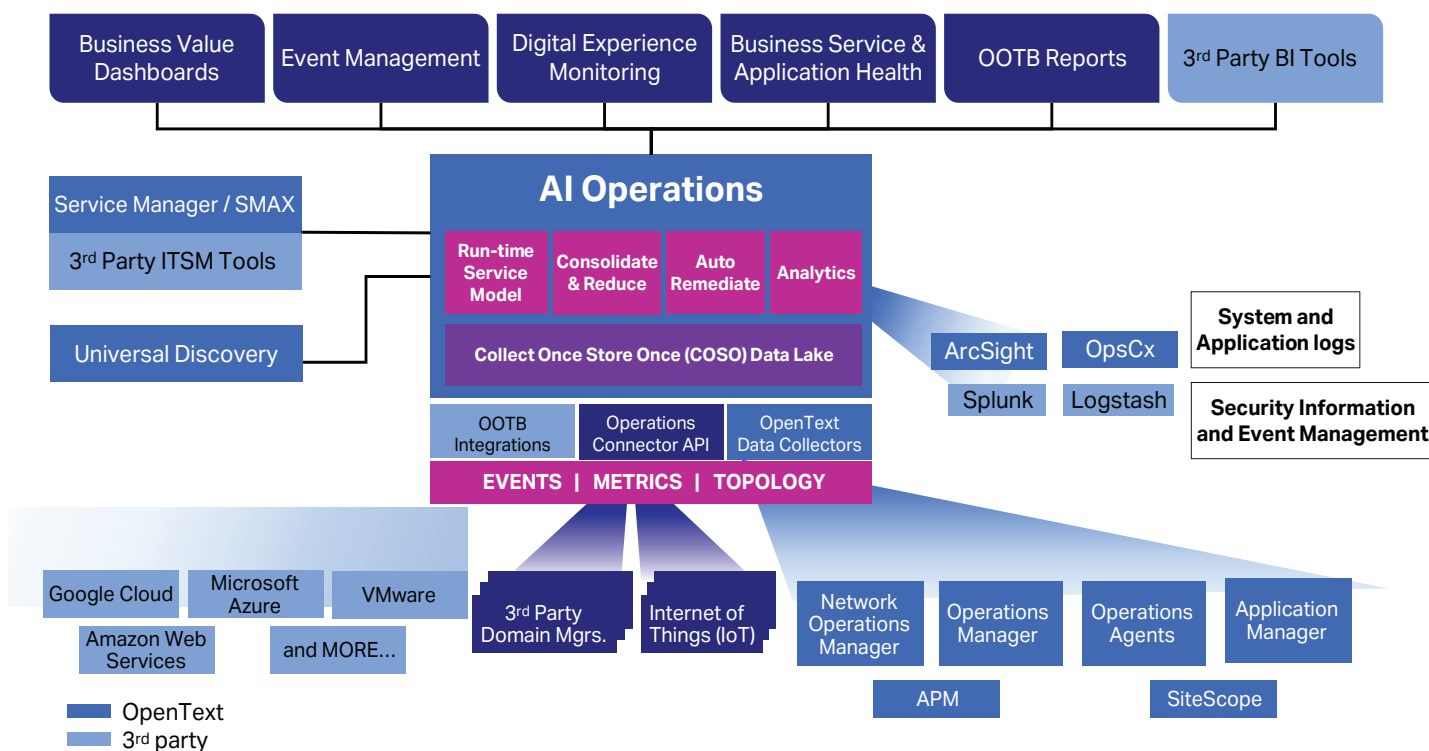


Figure 1. AI Operations is a single consolidated Console for all IT events.

AI Operations' history is in event correlation and analysis. Powerful AIOps analytics can now take millions of metrics, events, log files, etc., and automatically filter that information down into a few likely sources of the problem.

The result is a more modern solution, a better approach to monitoring that leads to Automated AIOps where discovery, monitoring, analytics, and remediation are all automatic. Thus, the root cause is found and fixed more quickly than by manual methods. Integrated, service-driven analysis and automation are incorporated in a modern platform based on the same technologies used to develop modern applications, such as containerization, micro services, and their orchestration.

Common Services

AI Operations is built on a common platform to other OpenText™ ITOM products, which not only furnishes services common to monitoring but also service management, brokering, and asset management. It's based on modern container, orchestration, and micro-service technologies to facilitate IT Operation Management functions and offer scalability, reliability, easier installation and maintenance, and productivity. AI Operations uses collect once store once (COSO) that provides a single framework for managing data collection and efficiently storing that data in a common data store built on OpenText™ Vertica™. COSO optimizes systems resources by reducing processing power and network loads.

Automation Is Key

Addressing the changes mentioned above and more yet to come, causes your staff stress. How will your skilled resources be able to embrace those changes and apply them to give the business the competitive edge it needs to compete if they are constantly firefighting?

AI Operations harnesses best practices, applying automation across discovery, monitoring, analytics, and remediation. Big data-based analytics and machine learning feed the orchestration engine that forms the basis of your IT Process Automation (ITPA) to free those skilled resources to focus on business priorities to make IT operations more autonomous.

"BVD is very important to our autonomous operations because it highlights where problems are, where to save money and where to be faster."

THOMAS BAUMAN

Head of IT Performance
Swiss Mobiliar

Above all, automation across all monitoring functions provides the means to gain Automated AIOps.

Automated AIOps is the ability of a system to sense the state of its environment, analyze the data it senses to find operational problems or changing resource demands, and adapt the environment dynamically to resolve issues and address changing business demands at optimal cost.

IT Operations Use Cases

To illustrate an Automated AIOps outcome, we define these use cases that are delivered by the AI Operations solution.

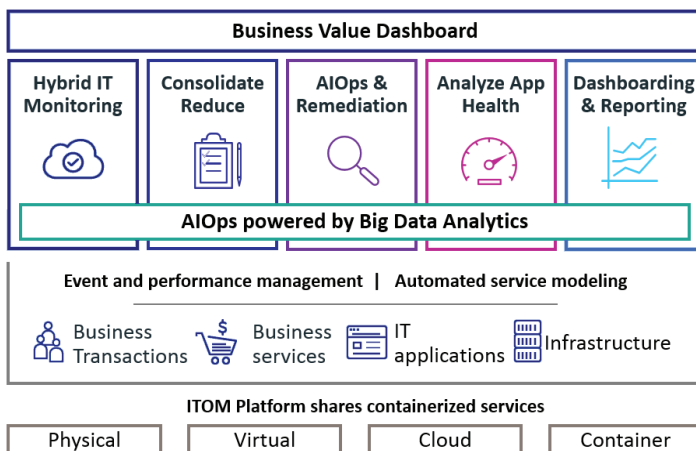


Figure 2. AI Operations functional architecture

Use Case 1—Hybrid IT Monitoring

Cloud Adoption and Monitoring

Our recent research shows that multi-cloud adoption is strong. Sharing of data with PaaS based application services and corporate data is now mainstream in many company architectures today.

One customer indicated to us that after three-years of steady deployment of cloud infrastructure for business users and developers, business sponsors were understandably requiring justification of the business value to which those investments relate.

Clearly IT needs to regain visibility of deployed resources and monitoring of the quality of cloud service delivery.

Using Multi Cloud
connected to On Premise



Problem Resolution
takes longer & more difficult

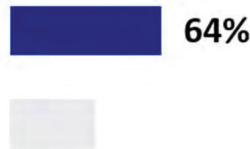


Figure 3. Hybrid cloud adoption—source: Dimensional Research, March 2018

AI Operations automates discovery of cloud resources and services within many infrastructures, including AWS, Microsoft Azure (including Azure Stack), Google cloud environments, and private clouds.

Amazon Capabilities

The AI Operations Management Pack² for Amazon Web Services applies AIOps capabilities to automatically discover, monitor, and detect performance issues through events and performance graphs for:

- AWS Elastic Cloud Compute (EC2) Server Instances
- Elastic Block Storage (EBS)
- EC2 Container Service (Amazon ECS)
- Dynamo DB
- Beanstalk Services
- AWS Service status
- Relational Database Service (RDS)
- Auto Scaling Group (ASG)
- Elastic Load Balancing (ELB)
- Simple Queue Service (SQS)
- Redshift
- Key Management Service (KMS)
- Simple Storage Service (S3) instances
- AWS Billing
- AWS Service Health Dashboard based on the services and regions in AWS

² Management Packs are domain specific add-ons to AI Operations that provide pre-programed intelligence for that domain

Azure Capabilities

The AI Operations Management Pack for Microsoft Azure applies automatic AIOps capabilities to discover monitor and analyze the availability and performance of:

- Azure Data Factory
- Azure Data Lake
- Virtual machines
- Azure SQL
- Storage account
- Azure App Service Plan
- Azure Web Apps
- Azure Active Directory Discovery
- Activity Logs
- Windows Activity Logs hosted on the Azure Environment
- Azure Load Balancer
- Multi instance support for Storage account service

Log streaming is supported with a lightweight Operations Agent. The Management Pack for Azure provides Azure Log Collection policies to enable the streaming of structured logs for Windows Event and Activity logs.

Google Cloud

The AI Operations Management Pack for Google Cloud applies automatic AIOps capabilities to automatically discover and monitor the availability and performance of Google Cloud Compute Engine instances in the Google Cloud Platform. It provides RtSM views and capture of performance and availability metrics used by the reporting and graphing capabilities of the AI Operations.

Hybrid IT environments, which includes on-premise data centers and public cloud, can be managed using the Management Pack for Google Cloud.

"It's quite difficult to correlate the information [from public and private cloud] We needed to aggregate this information into just one dashboard and for that AI Operations (formerly OpsBridge) is a perfect solution for us."

DAVID HERRARA REBOLLO

Cloud Infrastructure Service Manager
Banco Sabadell

"We achieved a higher level of automation to reduce events by 90% per day."

CARSTEN ABILDGAARD

IT Architect
KMD

Optimizing Infrastructure and Cloud Costs

AI Operations automatically discovers and monitors virtualized resources for popular hypervisors KVM, VMWare, vCenter, and HyperV. It then uses this data to provide comprehensive capacity planning and management with quick and efficient server monitoring, troubleshooting, and optimization of virtualized and cloud environments at a glance.

You can then plan for growth and optimize placement with historical usage data, forecasting, and what-if modeling to detect sub-optimal allocations and retrievable storage.

Also provided are forecasting and predictive analytics, business metric analysis with logical groups to extract insight, assess impact, and plan for capacity allocation. Coupled with a business metric analyzer, you can do demand shaping to matching infrastructure needs to business metrics like sales/turnover for better planning of capacity availability.

Cloud Service and Application End User / Transaction Analysis

When your architectures include integrated combinations of public and private cloud resources, it's vital to capture monitoring to govern the end-to-end availability and performance characteristics.

Issues may be due to any one of the resources in a public or private cloud from the multiple vendors you use, the network service provider connecting them to you, or within your own datacenter. And SaaS applications don't provide access to metrics "inside the box." Unravelling the root cause requires visibility of each element.

When consuming services, such information is necessary to ensure the services being invoiced correspond to the negotiated characteristics. Similarly, cloud services you provide are unlikely to be competitive or well-liked if their delivery is erratic or QoS is substandard.

Ensuring that cloud services are delivered to your business users according to SLOs, AI Operations provides synthetic end user monitoring, measurement, and transaction analysis to find weak links.

"You can expect 20-25% reduction in incidents as you implement the tool."

KULVINDER SINGH

Accenture–Micro Focus Alliance Practice Director
Accenture

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Use Case 2—Consolidate and Reduce

Sensing the state of an environment allows IT operations to accelerate its qualification of faults, alerts, and performance issues and prioritize them. AI Operations consolidates IT data from virtually any tool that monitors specific domains such as Microsoft SCOM, Oracle Enterprise Manager, SAP Solution Manager, AppDynamics, and many others.

Automated Discovery

AI Operations exploits agentless as well as agent-based collection to natively gather rich information from over 200 domains and technologies used today and is easily expanded.

It is the only solution to integrate multiple data types, specifically events, metrics, logs, and topology from 3rd party tools, to automatically build and dynamically update a service tree model of the managed objects and their dependencies. This facilitates provisioning of topology views to operators as well as prioritization of events linked to objects that depend upon each other.

Automated Service Modelling

Modelling of your business services can also be automated by pointing AI Operations to a service or application entry point, the applications and dependent objects can be discovered, and a service model can be built automatically. It is then automatically and dynamically adjusted as IT changes occur in your environment.

Log and Metric Streaming

As developers exploit DevOps and agile methods, monitoring as code should improve the instrumentation of their developed solutions. Log files are pivotal to this and monitoring solutions must stream the contents of that data for analysis, often in real time.

AI Operations provides lightweight agents as well as intelligent agents to stream, in real time, over 300 metrics, particularly useful for commissioning new developments, and for tuning.

The lightweight agent can be deployed in seconds and has a small footprint ideal for inclusion, for example, in multiple private cloud instances.

The data collected by agents is streamed to the AI Operations common data store whereupon consolidated stream processing and data cleansing is applied to find the signal in the noise.

This cleansing is an essential part of accurately sensing the state of key objects and services and giving operators the correct view of the most pertinent information. This will lead them to focus on the right issues and empower them to determine the business impact for prioritization.

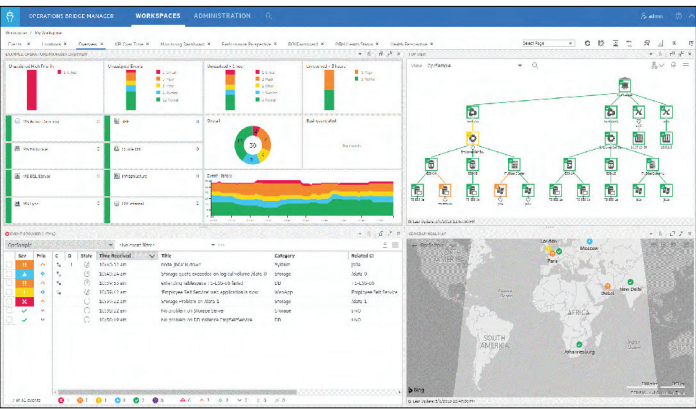


Figure 4. AI Operations Console

Monitoring Automation

Research shows that new instances of services, applications, and infrastructure may remain unmanaged for hours, days, or never.

AI Operations automatically discovers changes in the environment. As new objects are found and represented in the model, predefined and proven monitoring policies are applied, and monitoring is activated. Monitoring automation ensures no key resource capable of impacting the business will be unmanaged.

Use Case 3—Automated AIOps and Remediation

Following the “Sense” use case 2, where data is securely available for core monitoring services, the various data types are now available for automatic processing and root-cause analysis.

Service Driven Multi-Mode Correlation

Events, metrics, logs and topology are streamed into AI Operations via end-to-end monitoring from agent and agentless collectors, and connectors. Data from over 200 OpenText and 3rd party tools is also integrated. This allows for existing application, systems, storage, and network monitoring tools for virtual and physical domains to provide data.

This data enables the comprehensive insight and real-time analytics required when you’re monitoring and managing hybrid infrastructures, cloud services, and microservices. Using this rich set of information, AI Operations applies stream-, time-, and topology-based multi-mode correlation and advanced logic to determine the real cause of an incident. It then provides advice on the likely business impact and makes recommendations on how to prioritize remediation activities.

Service Driven Business Prioritization

The magic glue to providing prioritization of IT activities, and finding the root cause of IT issues, is the Run-time Service Model (RtSM). Manual declaration of a service or use of our Automated Service Modeling, allows you to discover and provide service definitions for your services, populated in the RtSM. This model is then connected through dependencies to the associated applications and infrastructure components. The net result is a faithful representation of your IT landscape that is dynamically updated and allows extensive analytics to accelerate root-cause events to operators thus improving MTTR.

Automated AIOps to Deal with the Unknowns

These powerful techniques cannot always determine root cause. How can an operator be assisted when there is a totally unknown problem?

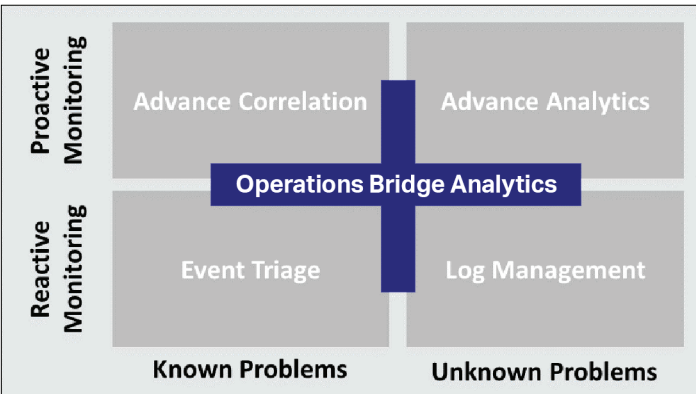


Figure 5. Dealing with unknowns

An expert operator or subject matter expert would access specialized resources and analyze task and process lists for issues with key services and processes and interrogate log entries to diagnose the situation. A fastidious method at best, especially if the systems in question are not well known, and worse, if the skilled expert is temporarily unavailable or requires purchase of expensive consulting service.

AI Operations provides help with unknown situations by applying automated analytics powered by OpenText™ Vertica™ stored in COSO.

Additional analytics, built from over 50 patents, executes across all data types, not just logs, to find patterns and anomalies automatically at speeds far faster and with higher accuracy than possible using manual means.

Automated Remediation

Once the root cause and business impact are known, IT operations must act to remediate the situation. This may be execution of a simple script, interaction with native APIs provided by a hardware or cloud vendor, or execution of a runbook. AI Operations includes a leading orchestration platform, [OpenText™ Operations Orchestration](#).

We provide over 8000 runbooks, incorporating typical manual processes executed by operators, such as to restart a virtual machine or perform clean up on file system. Customer specific runbooks can be easily created using a WYSIWYG workflow editor.

Adding the Power of Robotics

Even when using an integrated solution, not everyone has access to the monitored data, yet it describes the operational behavior of deployed applications. AI Operations is robotized. This allows users who don't normally have access to the capabilities described and the data it manages to converse in simple conversations over chat tools such as Microsoft Teams, Mattermost, or Slack.

"The CEO said this BVD is a very good idea, he's looking at it every day. It made a significant change in the perception of IT, now we're on the same level as the Line of business."

THOMAS BAUMAN
IT Performance Manager
Swiss Mobiliar
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Imagine the scenario shown.

Here an operator is faced with a situation he cannot handle directly. Normally, he would escalate, but this may easily introduce delays. With the real time chat capabilities, he can open collaborative conversations with several SMEs simultaneously to investigate, diagnose, and fix the issue much faster.

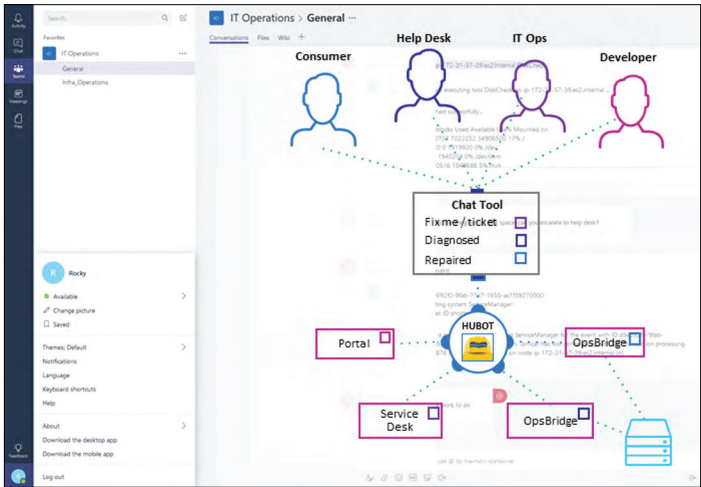


Figure 6. ChatOps improves continuous operations

Adding to this, the conversations in question can be recorded and used to furnish annotations and a searchable knowledge base of issues and fixes. Furthermore, it can be used to develop best practices that constitute automated workflows.

Use Case 4—Analyze Application Health

So much of business is derived from online services, its vital these days to monitor as the user sees them, capture response times, and isolate the weak link in the transaction chain. AI Operations include probes to perform this, with points of presence across the world, and maps that. This digital experience data is fed to all the AIOps, reporting and dashboarding capabilities. AI Operations also maps this data to the deep application and infrastructure data to indicate service quality and show operators where issues lie. Dashboards for stakeholders can easily show this data, coupled with other business and IT KPIS and IT status, to help make better decisions faster.

Use Case 5—Visibility and Reporting

How many of us buy newspapers today? And why? Frankly they contain yesterday's news, and we already know the news they report on because we saw it live or in near real-time.

CNN for IT

The same goes for IT operations today. People need to see what's happening as it happens. AI Operations common data store contains vital events, KPIs, context, and business information that can be exploited for this purpose.

As many executives do not have access to the operations tools and its data, what's needed is a means to show collections of this information on everyday devices, anywhere. AI Operations' Business Value Dashboard (BVD) provides this. Designed using popular office tools such as Microsoft Visio and Adobe tools, contextual powerful views are built for executives to see IT and business information in real time.

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BVD can send SQL queries to COSO, thus allowing analytic pre-processing of multiple data fields before display.

"BVD-in-3" allows configuration in minutes to create tailored views customized in minutes for your usage.

BVD provides a lightweight, fast, and easy to deploy a solution for reporting with text and graphs of performance data, which can be easily

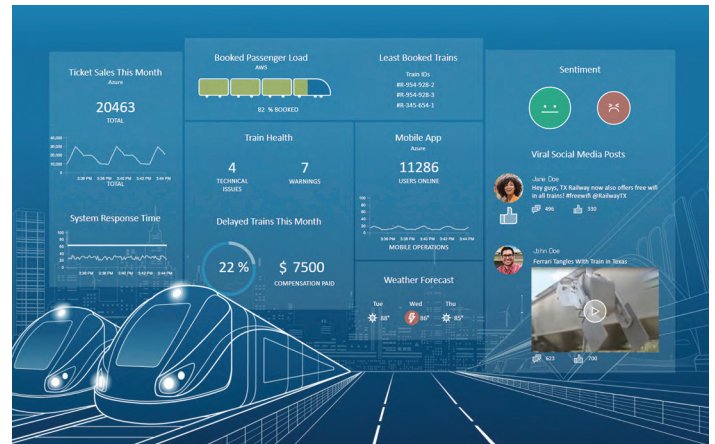


Figure 7. Business Value Dashboard illustrates the value IT delivers to their business partners.

stored, printed, and read in PDF format. You can now also use your own business intelligence tools to report on data from COSO.

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