



IT Operations Analytics:

Building Operational Intelligence to Drive Business Value

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Executive Summary

Information Technology (IT) is a primary business enabler today. Organizations rely heavily on it for enabling and enhancing their revenue-producing activities. Disruptive technologies such as cloud, internet of things (IoT), mobile internet, advanced robotics, and Artificial Intelligence are completely revamping the way business is conducted. The success of enterprises is therefore characterized by the technology and applications that underpin them. IT departments are tasked with driving transformational changes while running a business smoothly. This is a challenging mandate in today's virtualized, dynamic, and distributed environment that includes third-party systems.

It is therefore critical that IT leaders make use of the voluminous data generated by enterprise systems to maximize infrastructure performance in this increasingly complex and evolving ecosystem. This imperative has led to the emergence of IT Operations Analytics (ITOA) solutions. ITOA offers comprehensive application environment visualization. The automated solution gathers both structured as well as unstructured system data, analyzes it, and provides actionable insights to facilitate better informed decisions in real time. ITOA allows businesses to transform their approach from being reactive to proactive, and helps troubleshoot issues before they impact the business and its end users. It is the catalyst that can help organizations derive higher level of business value from the existing IT infrastructure landscape, and be more responsive and better prepared for future business growth requirements.

In this paper, we discuss the growing complexity of the IT landscape, the key elements of ITOA, and the role it plays in proactively identifying problems, improving performance, and reducing costs. It also highlights GAVS expertise in ITOA.

Increasing Criticality of Optimizing IT Operations

Businesses today are completely dependent on IT for running, managing, and scaling their end-to-end business operations. It is, therefore, vital to effectively manage IT operations to ensure that they do not negatively impact the end user, and in turn, the business' revenue or reputation. There is an increasing realization to effectively control and monitor the performance of complex, distributed, and virtual IT landscape, it is imperative to analyze large quantities of data stemming from various IT operations and systems. Analytics has become critical to performance and availability management by enabling fact-based perspectives that help prevent severe outages and ensure uninterrupted business operations.

Businesses also understand that given the enormity and complexity of modern IT landscape, it is not possible to manually analyze data points that run into terabytes. There is a growing need for an automated system for proactive discovery of data trends, relationships, and patterns. It is critical to adopt the right tools that can help IT operations and management build agility, respond to market complexity and pace of change, and optimize operations.

Growing Complexity of IT Landscape

Increasingly virtualized, distributed, and dynamic IT environments, with extensive interdependencies between applications, servers, and networks for service delivery are resulting in highly-complex technological ecosystems. As a result, organizations are

faced with several challenges that prevent them from effectively navigating the evolving IT landscape and optimizing system performance. These challenges include:

- **Managing the data deluge:** Increasing mobility powered by the internet, the proliferation of smart devices, availability of multi-platform content, and machine-to-machine interactions have led to a deluge of data. IT operational data points have the potential to provide in-depth insights into system performance and behavior, security, operational activity, application performance, etc. If leveraged effectively, they can help transform a reactive IT operational system into a more adaptive and proactive one. However, mining, managing, and harnessing humungous amounts of data effectively is a major challenge for businesses.
- **Optimizing costs:** According to a Gartner forecast, IT spending is likely to reach approximately \$3.5 trillion in 2015, a 5.5% decline from last year.¹ This means "doing more with less" is even more critical now than it was in the past. IT operations are often expected to run on lean resources, manage complex, large, and hybrid environments, and respond to dynamic changes. Given the situation, organizations are finding it increasingly challenging to enhance productivity while optimizing costs, and IT teams are under constant pressure to handle rapidly-evolving applications across the environment.
- **Rising BYOD trend:** The growing Bring your Own Device (BYOD) trend has set forth incremental challenges for

¹ <http://www.gartner.com/newsroom/id/3084817>

organizations who find it incredibly difficult to manage increasing number of access points. As organizations try to harness the IoTs and provide more connectivity, ensuring security, flexibility, and quick problem resolution, it is critical to enhance productivity.

- **Agile testing approaches and rapidly-changing versions:** Increasingly popular agile testing approaches have resulted in near real-time development cycles that result in minor yet frequent changes in production applications. However, given the extensive interdependencies between systems and applications, these changes may lead to unforeseen errors that can severely impact system availability and in some cases, stability. IT operation teams often resist these unpredictable changes in order to ensure performance consistency. However, these upgrades are critical as they provide flexibility and agility to meet growing business requirements.

ITOA: Driving Comprehensive Visibility and Optimization

To effectively respond to the changing IT environment and operating models, the IT operations organization needs to adopt a proactive approach to service and performance management. Businesses need holistic, granular insight, and real-time visibility into their IT portfolio to optimize service delivery. To achieve this, applying predictive analytics to IT operational data can help IT management teams and organizations address various operational challenges, and streamline and optimize performance.

IT operations analytics software market is likely to register a CAGR of **18%** during 2014-2018.²

The emergence of ITOA makes it easy for organizations to gain comprehensive visibility into IT infrastructure usage, performance, and issues. Analytics helps better in identifying problem areas or discrepancies in the network that allows IT teams to proactively resolve issues before they impact users or business performance. ITOA combines real-time monitoring, analytics, and visualization that enable comprehensive visibility across complex IT infrastructure, and help identify the root cause of problems quickly and effectively.

It captures a vast amount of data stemming from various IT end points and processes, integrates, analyzes, and interprets the data to provide actionable insights. In addition, ITOA automatically unearths patterns that help identify and isolate failures, disruptions, and variances in real time, in turn, building business intelligence and supporting data-driven decision making. It also facilitates proactive monitoring through robust predictive analytics that help prevent impending outages or downtimes. The predictive modeling component of ITOA helps assess future conditions and requirements, thus enabling better capacity planning.

While ITOA solutions offer a great potential to maximize security and performance of an organization's IT network, it is important to understand that a favorable solution is one that offers a wide range of techniques. Advanced analytics used in ITOA solutions should typically employ multiple pattern

discovery methods. These include rule-based analysis, identification and analysis of system topologies, string analysis of system data such as log files or poly-structured texts, as well as slicing and dicing of multi-dimensional data cubes. In addition to this, given the complexity, dynamics, and enormity of today's IT environments and processes, organizations need automated tools and platforms that can help capture, correlate, and analyze data from across the environment.

Lastly, it is critical to choose an ITOA solution that can easily integrate with the existing IT asset management (ITAM) and IT service management (ITSM) solutions to maximize returns and deliver business value.

Understanding the Key Elements of ITOA

ITOA tools provide comprehensive visibility into operations and application performance across the IT landscape. An effective ITOA solution should be compatible with a multi-vendor, complex and distributed service delivery framework. Advanced ITOA solutions use predictive analytics that helps analyze system data to measure performance and drill down to predict what might happen next. Predictive analysis is based on models that analyze past data and predict the behavior. The scope of predictive analysis is to forecast potential risks using risk-detection mechanisms, and also predict workload patterns as per business requirements to facilitate proactive performance and capacity management.

According to a Gartner's survey, **60%** of organizations invested in ITOA solution for its predictive insights.³

The primary focus of ITOA is to identify issues ahead of time, improve IT service performance, minimize pressure on IT operations teams, and simplify operations. It analyzes performance and incident data to better predict and prevent outages while optimizing infrastructure performance. ITOA can be categorized into following main focus areas:

- **Incident Management:** Effective incident management helps drive efficient application performance. It combines a series of steps that identify, classify, analyze, restore, and close incidents in a consistent manner. Typically, incident management processes are reactive measures that provide quick resolution to fix the issue, rather than analyze the root cause. Embedding ITOA into this area can help identify gaps in IT and business processes, and provide continuous improvement strategies to proactively mitigate risks. This will not only enable organizations to minimize errors and incidents over a period of time but also deliver the highest quality of service and ensure adherence to SLAs.
- **Performance Management:** Performance management enables organizations to monitor and optimize their overall business application performance and outcomes. Leveraging predictive analytics in performance management can help businesses detect or even forecast anomalous system behavior. The use of intuitive dashboards with drill down features provides complete visibility into applications' performance and service delivery, by application and location. Access to accurate performance metrics and insights enables organizations to continuously improve system performance, as well as forecast and

ensure effective capacity planning.

- **Capacity Management:** Capacity management is critical for competing in today's dynamic marketplace. Effective capacity management helps businesses effectively respond to evolving market demands. Capacity management changes constantly and needs to be a scalable process within a company. Leveraging analytics to plan the capacity can help organizations optimize their IT landscape and resources, and align them with business-specific requirements. Analytics empowers businesses to measure their current capacity and foresee how well they are equipped for business growth and an introduction of a new line of services. Access to actionable insights improves business intelligence and helps enterprises plan capacity as per scalability requirements to ensure right-fit service delivery infrastructure at an optimized cost.

Sparking Transformation through ITOA: The Benefits

A report by Gartner says implementation of ITOA can reduce the number of outages and incidents.² The level of efficiency required to optimize operations can only be achieved through increased visibility and improved intelligence. ITOA solutions help build these capabilities to drive operational transformation. They not only help improve application performance but also significantly impact the bottom line. Adoption of ITOA solution can facilitate IT operations excellence at an optimized cost and help derive a range of operational and business benefits that include:

- **Enhanced system performance:** Real-time monitoring and root-cause

analysis provide evidence-based understanding and accurate performance measurement, and augments a culture of continuous improvement. This helps enhance the health, reliability, and efficiency of the system.

- **Increased agility:** Holistic visibility into server, storage, and network workload help predict workload demand patterns and effectively plan capacity. It helps build flexibility and ability to scale effortlessly according to business requirements.
- **Simplified IT operations:** Unified platform provides complete visibility across the IT landscape and analyzes data in real time, thereby providing intelligent operational insights, and augmenting effective performance and capacity management.
- **Greater application availability:** Proactive performance management helps mitigate risks and variances before they can impact system performance and user experience.
- **Optimized productivity:** Increased ticketing automation, better transparency, and reduced outages help lower troubleshooting and incident response time and effort. This, in turn, enhances the effectiveness and efficiency of IT teams.
- **Reduced costs:** Improved service delivery efficiency and reduced business disruption help reduce operational and maintenance costs. In addition to this, proactive monitoring and future capacity and failure prediction help intelligently plan IT investments and optimize infrastructure costs.

Fueling Optimized Service Delivery: The GAVS Expertise

A unified platform for IT operations analytics can transform high-volume system and service

² <http://www.idc.com/getdoc.jsp?containerId=252790>

³ <https://www.gartner.com/doc/2284116>

Author Profile

Kavipriya Moorthy is a Business Analyst at GAVS technologies, with five years of experience. Her experience includes software development for a brief period. She has been diligently working with predictive analytics lately, and explores on the domain to deliver a concrete solution for the new product that the team is working on.

Kavipriya holds a bachelor degree in Engineering and a master degree in Management from Anna University, Chennai, India.

About GAVS

GAVS Technologies (GAVS) is a global IT services & solutions provider for customers across multiple industry verticals. GAVS offers services and solutions aligned with strategic technology trends to enable enterprises take advantage of futuristic technologies like Cloud, IoT, Managed Infrastructure Services, and Security services.

GAVS has been recognized as an emerging player in the Healthcare Provider IT outsourcing sector by Everest Group, and as a prominent India-based Remote Infrastructure Management player by Gartner.

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