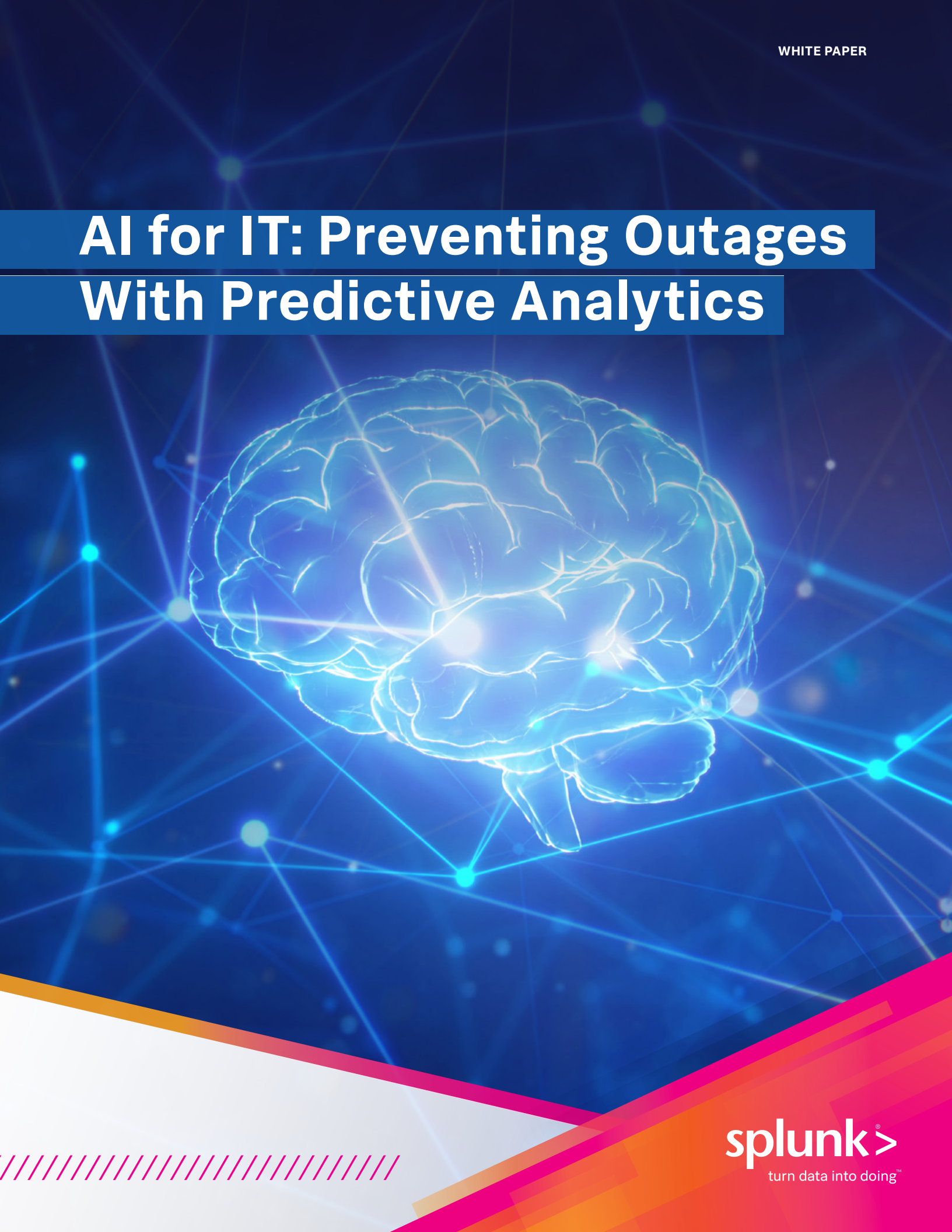
WHITE PAPER

AI for IT: Preventing Outages With Predictive Analytics



splunk> turn data into doing™

Reactive IT is So Yesterday

In the age of Amazon and same-day delivery, today's customers demand a seamless and undisturbed online experience. They expect applications and websites to be up and running at peak performance, 24/7. If you're an organization that continues to push your business to implement a next-gen digital model to support these demands, you likely have started to explore what artificial intelligence (AI) and predictive capabilities could mean for both IT and the business. You're probably looking at how to make sure that your IT staff has access to technology that makes it as easy as possible for them to ensure that your services and applications continue to perform well and are available to the business and your customers. And if you haven't started the push to become a next-gen digital business, then it's a great time to start exploring how IT can jump in first with predictive capabilities and really set the course of the business.

$105,302
= the mean business cost of an IT incident[1]

Traditional IT monitoring approaches have historically been very manual and reactive. Whether you're monitoring your applications, cloud, host/OS, mobile, database or storage, you're familiar with the following workflow:

- Your events are generated from alerts based on rules and thresholds you continually need to update.
- These events become incidents. Whether or not they are incidents that actually mean something detrimental to your uptime, you don't know until you manually investigate.
- Then, once you've investigated and found the incident that's affecting your performance and availability, your teams have to request a service ticket, and the support and domain owners are called upon to troubleshoot and remediate the problem, where hours of productivity are lost.
- These incidents are analyzed and correlated to get down to the root cause, and resolution or a band-aid is achieved.

This process is slow and unproductive and frequently your customer's experience is affected while you're going through these steps. And you get heat from your key internal stakeholders, especially if there was a cost to the business due to the downtime experienced.

You've been doing this for a while and your IT team has gotten by. What if this lengthy, stressful, and often manual process didn't have to be the reality? What if you could predict that this outage was likely going to occur so that your team could take the necessary steps in advance to prevent it from ever even crossing your service help desk? Meeting those internal SLAs and getting to the necessary decision has never been quicker than by applying AI to your data.

A Predictive and Preventative Approach

Everyone needs access to information that will quickly and accurately help them make decisions on time-sensitive matters. For IT departments this is no different. They need information that will quickly help them determine the root cause of an incident so that they can solve it as quickly as possible so the outage does not greatly impact the business and their customers. But why stop there when having this information **before** something bad happens would be even better? Imagine a world where 30 minutes before an incident even crosses the service desk, your team is alerted of the potential incident. They then can get ahead of it by taking the necessary steps to prevent it from even happening at all. What benefits do you gain from implementing a predictive strategy like this?

- **Maintain Consistent Customer Experience:** Prevent outages and keep your customer's experience intact.
- **Revenue Unimpacted:** When the customer isn't impacted, you remove the potential that revenue might decrease because of downtime (and customers leaving due to poor experience).
- **Increased Productivity:** Internal teams have more time to spend on the organizational initiatives that help move the business forward, instead of remediating problems and getting stuck in war rooms.

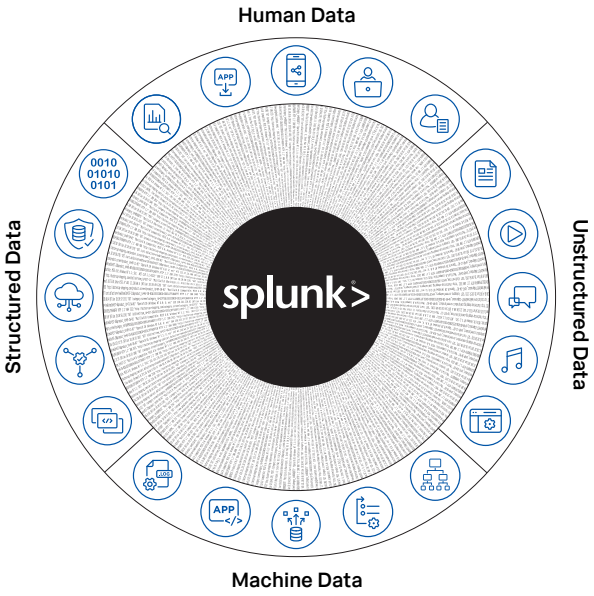
1. Damage Control: The Impact of Critical IT Incidents, Bob Tarzey, Quocirca, November 2017

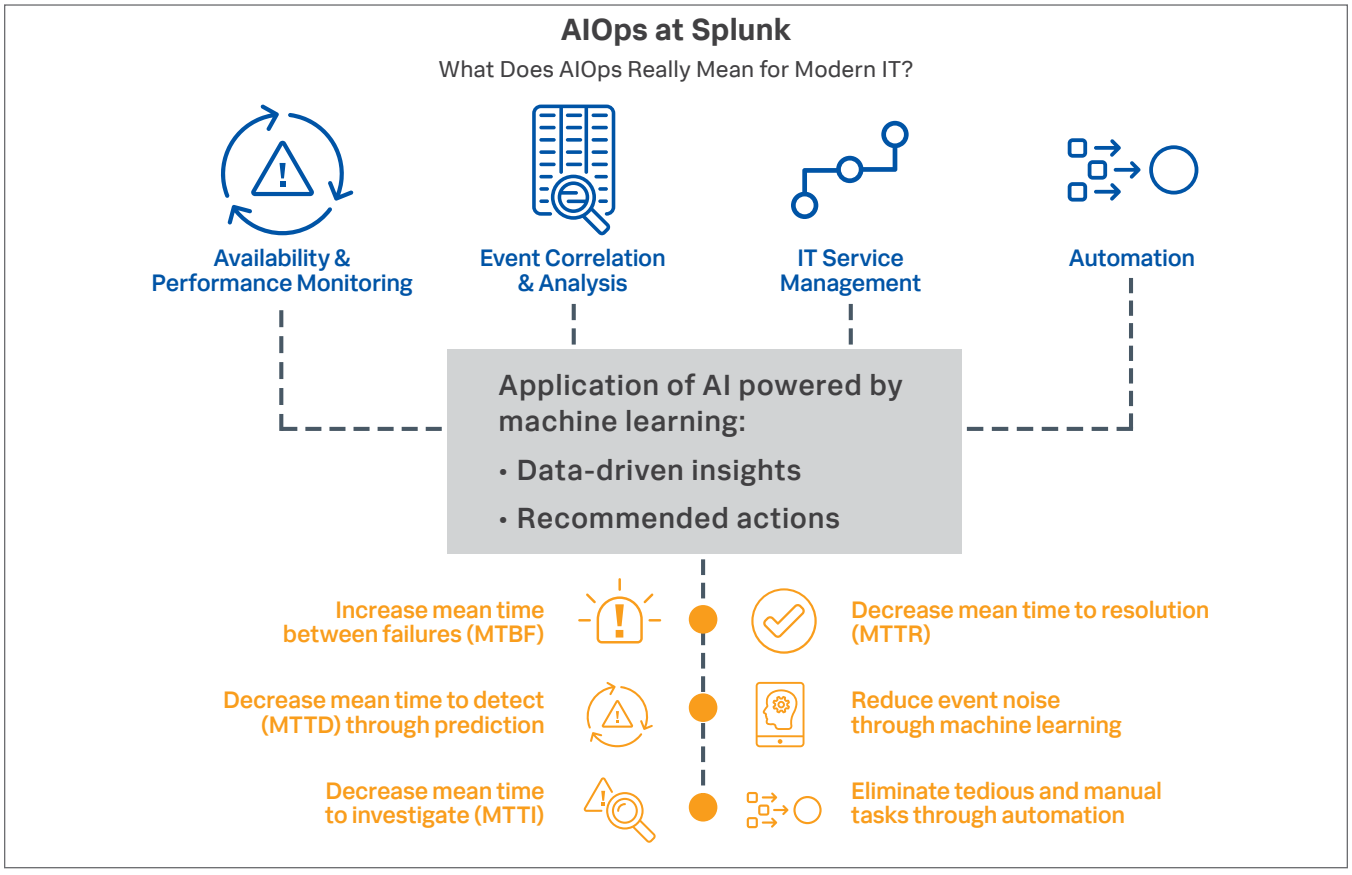
How do you get to a predictive and preventative state of IT? For one, you need a solution that can prepare and wrangle all your data. But that is just part of it. You need a solution that has sophisticated AI so you can apply machine learning to your data in order to gain those predictive insights.

Data: Your Foundation to Successful AI

Data is the necessary foundation for any successful AI solution. Why? You need lots of historical and real-time data to understand the past so that you can predict what will mostly likely happen in the future. It becomes critical to gain insight into past states of your systems and correlate those learnings with the present, so you can proactively fix errors, prevent downtime and optimize efficiency.

To achieve this, organizations must ingest and provide access to a vast range of historical and streaming data types for both human and machine-generated data. For complete visibility, you need to be able to access all of this data in one place across all of your IT silos. It's important to understand the underlying data supporting your services and applications and to define the key performance indicators (KPIs) that define their health and performance status. As you move beyond data aggregation, search and visualizations to monitor and troubleshoot your IT, machine learning becomes key to achieving more predictive analysis and automation.





Data Meet Your Match: Machine Learning

Just having the data and a place to house it isn't going to get you to a predictive state. You need to apply machine learning, a subset of AI, to the historical and real-time data you've collected and use it to help predict high-likelihood, potential future events. The power of machine learning allows you to:

- Use event data and apply analytics to reduce event noise, false alerts, and rule maintenance so you can easily identify the business-impacting problem that needs to be prioritized and addressed
- Detect anomalies by looking at your data, baselining operational patterns and using statistical measurements to determine threshold variability patterns
- Dynamically adapt thresholds to this changing behavior and anomalous activity

Having a platform that can take a look at these patterns and baseline what is normal and not and alert you of these anomalies, good or bad, is truly where machine learning helps you begin to take a more predictive and preventative approach to IT.

AIOps: Returning Time and Money to the Business

You may have also heard the term Artificial Intelligence for IT Operations (AIOps). **Gartner defines AIOps** as follows:

- "AIOps (see Note 1) platforms are software systems that combine big data and AI or machine learning functionality to enhance and partially replace a broad range of IT operations processes and tasks, including availability and performance monitoring, event correlation and analysis, IT service management, and automation."[2]

What does automating and replacing these tasks really mean though, and where does prediction come into play? With a solution where you can combine machine data and apply AI to your historical and streaming data you can predict imminent outages and thereby prevent them from ever occurring.

By reaching a predictive and preventative IT state you can achieve the following:

- Decrease the mean time to detect (MTTD)
- Increase the mean time between failures (MTBF)
- Decrease the mean time to investigate (MTTI)
- Decrease the mean time to resolution (MTTR)

What is AIOps?

Artificial Intelligence for IT Operations

Gartner's Definition

"AIOps (see Note 1) platforms are software systems that combine big data and AI or machine learning functionality to enhance and partially replace a broad range of IT operations processes and tasks, including availability and performance monitoring, event correlation and analysis, IT service management, and automation."

2. Source: Gartner; Market Guide for AIOps Platform, Will Cappelli, Colin Fletcher, Pankaj Prasad, August 3, 2017.

This graphic was published by Gartner, Inc. as part of a larger research document and should be evaluated in the context of the entire document. The Gartner document is available upon request from https://www.splunk.com/en_us/form/market-guide-for-aiops-platforms.html.

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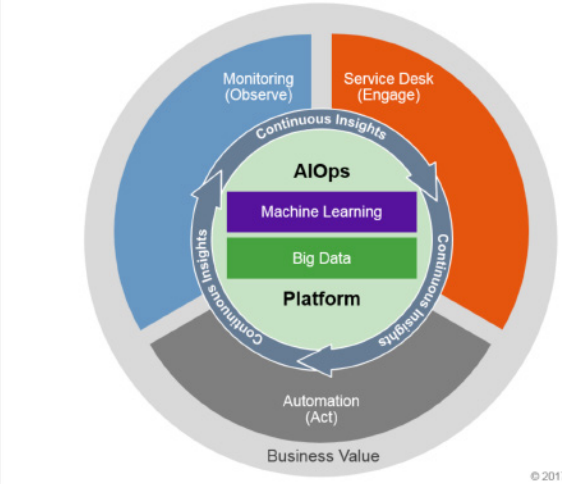
Figure 1. AIOps Platform Enabling Continuous Insights Across IT Operations Management (ITOM)



Source: Gartner (August 2017)

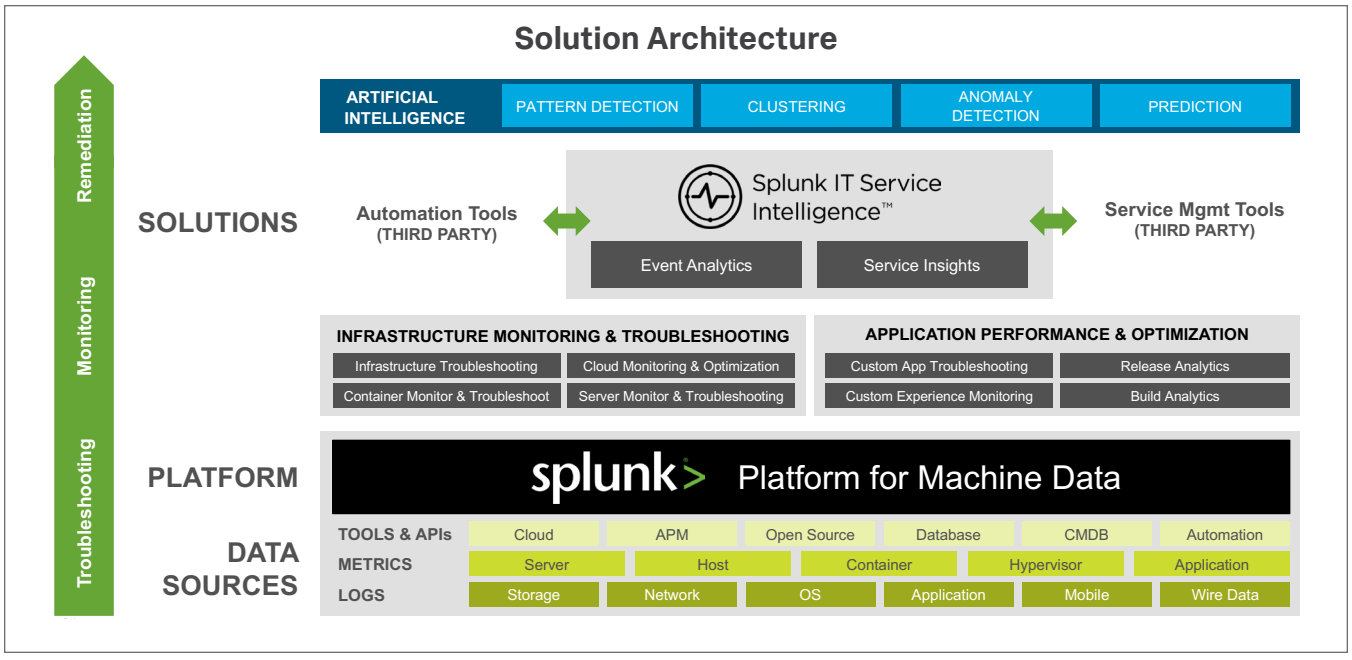
Ultimately, you're reducing the manual tasks associated with detecting, troubleshooting and resolving. Time is saved and returned to IT and the business by avoiding that cumbersome process outlined at the very beginning of the paper. Incidents that would have otherwise had a negative impact on the business are avoided, saving you not only time, but the potential monetary cost to your organization. Most importantly though, your customer experience remains intact, if not improved, through the consistent uptime maintained. Keeping the services and applications that your end customers use running smoothly and easy to access is what your business' main goal is at the end of the day.

Splunk: Enabling Preventative IT

So how do you find a platform for data that also applies machine learning? We'd like to introduce Splunk® IT Service Intelligence (ITSI).

Splunk ITSI is a monitoring and analytics solution that gives you visibility across IT and business services, and uses AI to go beyond reactive IT to predictive and preventive IT. Splunk ITSI uses machine learning to do things like help predict an outage and how services will be impacted before it happens, so that your customer experience and revenue remain unchanged. Using the comprehensive data ingested into Splunk to feed into our unique machine learning algorithms, you're able to predict what the health of your services and applications would be, and to run this type of alert on a timeframe that makes sense based on your organization's individual needs.

You can install Splunk ITSI quickly, connect to data sources easily and then begin interacting with the data immediately. Fast-track your data collection, simplify service definitions and leverage machine learning to gain predictive insights across your complex IT environment. With help from Splunk ITSI you can get closer to that preventative state of IT operations that is less stressful and more productive.



Want to understand more about what AIOps can mean for your organization? We feel you should check out **Gartner's August 2017 Market Guide for AIOps.**[2]

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