

SPONSORED CONTENT

**CIO**  
FROM IDG

splunk>

Listen to your data.®



*From* **REACTIVE**  
*to* **PREDICTIVE**

**5 STEPS**

TO TRANSFORM YOUR  
IT ORGANIZATION WITH  
ARTIFICIAL INTELLIGENCE



**MACHINE LEARNING CAPABILITIES.** Tools for consolidating and analyzing big data. IT organizations have historically deployed these technologies separately. What's next: combining the essential benefits and power from both.

"Over the past three years, IT operations have deployed big data and machine learning technologies separately to support IT operations in monitoring. Over the last six months, however, enterprises have begun to combine their IT-operations-oriented big data and machine learning projects and extend them to service desk and automation."<sup>1</sup>

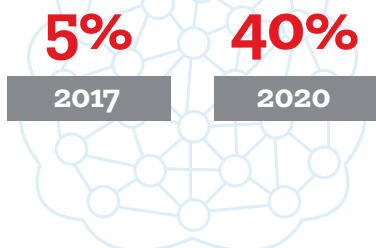
Forward-thinking organizations combine data and machine learning (ML) for IT monitoring, service desk tasks and automation. Although only a small percentage of large enterprises are doing this today, it is expected to balloon in the future. "By 2022, 40% of all large enterprises will combine big data and machine learning functionality to support and partially replace monitoring, service desk and automation processes and tasks, up from 5% today."<sup>2</sup>

This whitepaper will explore the benefits of combining ML (machine learning) with AI (artificial intelligence), and offer 5 steps for implementing this strategy.



## THE PUSH FOR MACHINE LEARNING AND BIG DATA

**Organizations that combine data and machine learning for IT functions such as monitoring, service desk tasks, and automation.**



SOURCE: Gartner Foundational Market Guide for AIOps Platform, Will Cappelli, Colin Fletcher, Pankaj Prasad, 3 August 2017

## Leveraging the Power of Data with Machine Learning

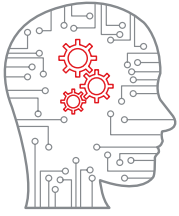
The list of benefits resulting from combining ML and big data is a long one. Consider the following:

- Apply machine learning to historical and streaming data to predict potential service degradations such as unavailable websites and mechanical failures. This can improve customer experience and prevent costly downtime for IT.
- Gathering data-driven insights into business opportunities (and risks) based on changing customer behavior. This can lead to driving potential new products and services; and minimize missteps in investments and product development where no longer needed.
- Move your organization forward with agility and gain a competitive edge. Properly designed ML-powered data solutions can ingest information from individual business units or the entire enterprise equally well, at scale. This lets organizations expand projects quickly.
- Empower IT managers and professionals to do more in one solution by both cutting through event storm noise and normalizing data from siloed sources. Examples include structured data such as service metrics and unstructured data such as customer comments.

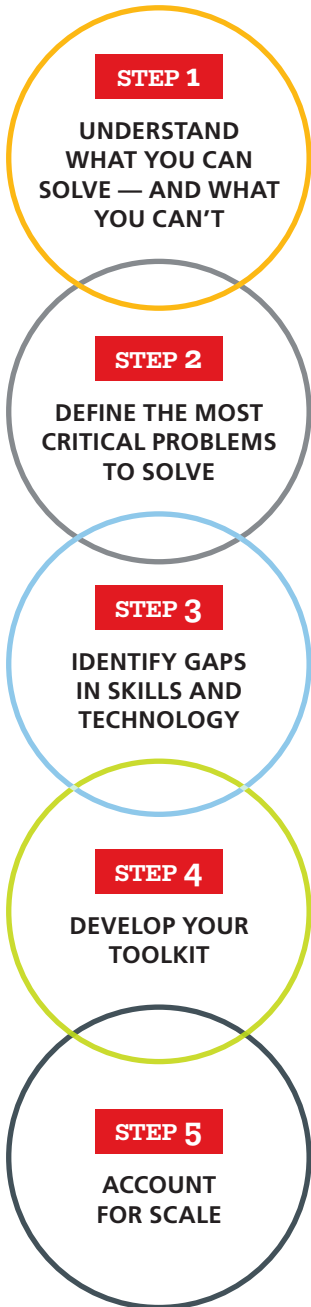
However, many IT leaders acknowledge they are eager for such shifts but need more support to enact them.

Nearly three-quarters (73%) of IT managers and executives struggle to balance resources spent on innovation versus what's needed to achieve operational excellence, according to IDG's 2018 State of the CIO. That's partly because IT can get bogged down with too many tools and competing priorities that add time to investigating issues.

What's needed: a plan that any organization can use to bring together ML technology, data, and people in order to achieve IT transformation. In short, to start realizing the benefits of predictive IT.



## 5 Steps to Predictive IT



### Defining Predictive IT

In addition to conventional, reactive approaches to IT, predictive IT leverages ML to serve up insights that help IT departments be more proactive. In some cases, predictive IT can even help IT anticipate and get ahead of potential future problems.

Instead of merely responding to alerts and other issues after they occur—along with handling outages and managing poor customer experiences—predictive IT lets teams anticipate service degradation and other problems before they impact customers.

The result is a powerful new approach to IT that creates more reliable services for an organization's customers and makes the entire enterprise more nimble and responsive to changes in customer behaviors and business demands.

Predictive IT works by taking in data from across the enterprise in real time and applying machine learning to identify historical patterns. This can help IT teams predict events such as future service outages by proactively investigating, for example, anomalous upticks in the response times of dependent services.

Armed with this knowledge, IT professionals can get a jump on investigating and resolving issues. Predictive IT can play a major role in:

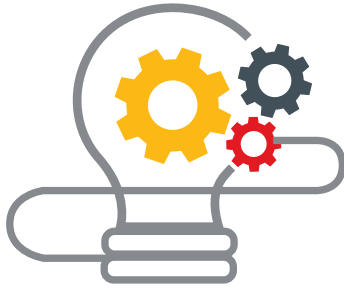
- Advancing business values by creating a more nimble IT organization.
- Preserving lines of revenue by preventing outages, minimizing downtime, and averting the accompanying customer churn.
- Improving customer satisfaction by providing a higher-quality customer experience, such as more responsive services.
- Protecting revenue loss, fees, and brand reputation by creating a more secure and reliable environment.

#### ▶ **STEP 1: Understand What You Can Solve—and What You Can't**

Start by understanding where predictive IT can help and where it can't. For example, while it represents a powerful approach to IT operations, and even offers the potential to transform the entire enterprise with access to new insights into customer behavior and key services, machine learning can't replace the experience of skilled professionals.

Instead, IT departments that deploy predictive IT can free up their teams to do what they do best: focus on issues that are the highest priority and then apply human understanding to developing solutions. For example, tools may flag a sudden surge in traffic to a retail site as a potential issue, but an IT professional can tell you that the surge might have actually resulted from a new promotional campaign.

Organizations that deploy predictive IT can leverage large amounts of data to spot trends, surface insights, and point to possible solutions. Automation in tools also may help resolve issues. But it's up to IT professionals to apply the deeper analysis needed to achieve previously-defined operational and business goals. Defining those goals is the next step in deploying predictive IT.



**80%**

**OF COMPANIES SEE CIOs AS STRATEGIC ADVISORS OR CONSULTANTS FOR THE BUSINESS.**

2018 STATE OF THE CIO

## ▶ **STEP 2: Define the Most Critical Problems to Solve**

Thanks to its versatility and utility in diverse environments, predictive IT can help organizations solve a wide range of problems. That includes mitigating the top two challenges faced by IT departments: increasing operational efficiency (39%) and improving customer experience (38%), according to IDG's 2018 State of the CIO survey.

Other challenges that predictive IT can help solve include:

- **Predictive maintenance:** This is especially valuable for manufacturers and other process-intensive businesses that rely on machinery. Here, predictive maintenance can help avoid unexpected, costly slowdowns by predicting impending equipment failures.
- **Efficiency improvements:** Such improvements can be found not just in operations, but in all areas of the enterprise.
- **Spotting trends in customer interactions:** Surfacing customer trends that may not be readily visible on their own can help managers accomplish everything from improving customer experience to identifying potential new products or services in which to invest.
- **Aligning disparate databases:** Organizations often struggle with determining exactly what data they have to work with across their systems. Fortunately, the most capable predictive IT solutions unite data before conducting analysis.

Since more than three-quarters (80%) of companies see CIOs as strategic advisors or consultants for the business, according to the 2018 State of the CIO survey, IT managers play an important role in defining key focus areas for new technology such as predictive IT solutions. To get buy-in for deployments themselves, it works best to frame new solutions in a way that aligns with broader company goals.

## ▶ **STEP 3: Identify Gaps in Skills and Technology**

The IT skills gap is real, and it isn't going away any time soon. More than half (59%) of IT leaders anticipate talent shortages in the next 12 months, according to the 2018 State of the CIO report. On top of that, IT budgets are growing slowly or not at all, according to the report.

Predictive IT solutions can help mitigate both challenges by empowering IT staff to do more, faster than they could unaided.

However, key skills are still needed to drive these solutions. Just as software engineers must keep up with the latest coding tools and languages, so too will data scientists and incident managers need to become familiar with machine learning capabilities.

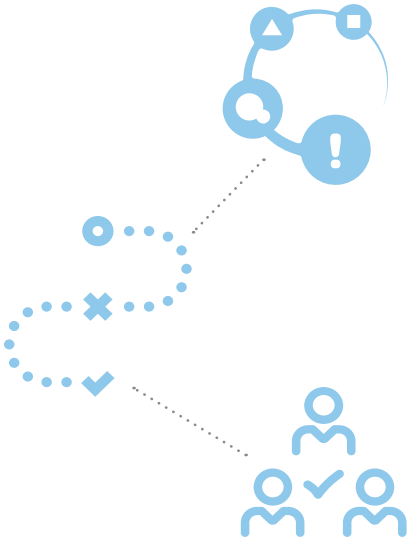
That said, today's tools don't necessarily require PhD-level educations to operate, since they do the heavy lifting behind user-friendly interfaces.

Regardless of existing technology, work towards an overarching platform. A successful predictive platform should address all the necessary ingredients—skilled people, machine learning-powered technology, and a data-based solution.

## ▶ **STEP 4: Develop Your Toolkit**

After clarifying what problems predictive IT can solve for your organization, defining the specific challenges you want to overcome, getting buy-in from your organization, and assessing what you have to work with across your digital landscape, the next step is to develop your toolkit for deployment. This comprises three main parts:

- 1. Roadmap:** A good roadmap starts with putting together the business case. It's a good idea to develop a proof of concept to gain wider acceptance throughout your organization. Armed with early successes, you can put together a broader strategy for applying predictive IT further across the enterprise to align all parts of the business. Then, once your new systems are up and running, you can enable continuous improvement by gathering and responding to feedback from all parts of the organization.
- 2. Testing plan:** To test the effectiveness of your predictive IT deployment, start by clearly defining what you want to accomplish and what defines success. More specifically, define the metrics that will indicate progress, whether that's enhancing operational efficiency, improving customer outcomes, or other objectives.
- 3. Establish the team:** Getting training for IT staff and bringing in outside partners to help get new systems up and running can relieve the pinch. Today's simpler interfaces for tools and the ready availability of consultants for deploying those tools can smooth the way forward.



## ▶ **STEP 5: Account for Scale**

Part of any broader predictive IT strategy should include mapping out your enterprise's data across systems, apps, services, and infrastructure. That includes data in differing formats, both structured and unstructured, such as customer comments and service representative notes.

It's critical to select tools that can ingest, normalize, and format all data sources—both on-premises and in the cloud—for analysis. In addition to providing insights from structured data, such tools can also help analyze textual comments and other unstructured data through queries. It's all part of selecting platforms with room to scale and mature.

It's also important to account for an organization's unique needs when undertaking significant change. Although "land and expand" works for many organizations, some with a high tolerance for risk might make a push to transform operations across the enterprise all at once. On the other hand, many organizations, especially those in heavily regulated industries such as banking, will have to take into account more moving parts, including regulatory compliance, as part of a steady step-by-step approach.

In general, stable, sustainable change starts with a small-scale use case and leverages early success to build expertise and confidence for expanding further.

Last, keep in mind that transforming IT through predictive IT can also transform business operations by providing new capabilities and new insights into customer behavior and enabling faster times to market with new products and services.

### **The Bottom Line**

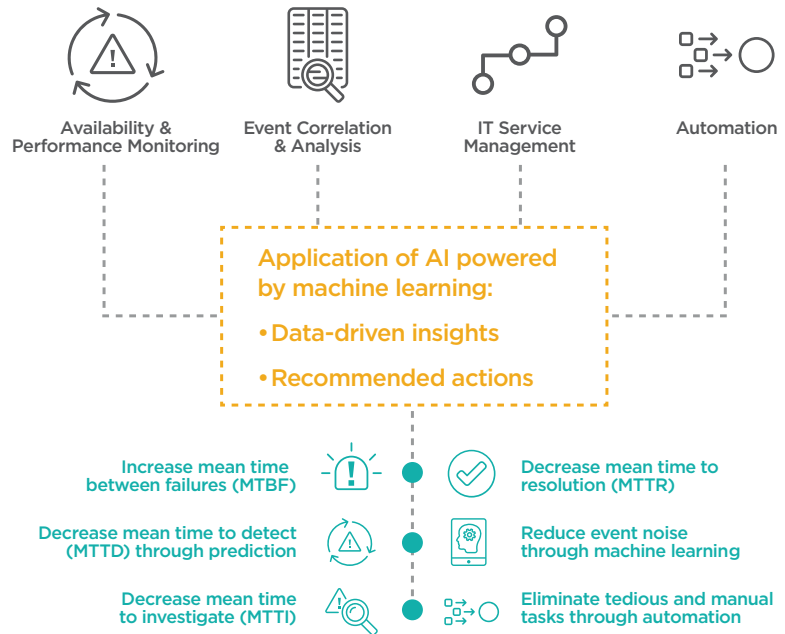
**Big data, combined with the power of machine learning, has enormous potential to help IT better serve the enterprise and its customers. Predictive IT can help organizations solve major business and IT challenges and drive efficiencies in an era of flat IT budgets, while also improving customer service in a customer success-focused economy.**

<sup>1, 2</sup> Source: Gartner Foundational Market Guide for AIOps Platform, Will Cappelli, Colin Fletcher, Pankaj Prasad, 3 August 2017

# Deliver Exceptional Customer Experiences with Splunk

## Splunk as your Predictive IT solution

Legacy approaches to IT Operations' tasks and processes are slow, inefficient and often result in siloed data and insights, costing the business time and money. By marrying machine data with machine learning, Splunk delivers a modern approach to bring data-driven decisions easily to modern IT organizations. With Splunk, your teams are empowered to predict and prevent issues from arising and quickly resolve operational disruptions in real time. You can move seamlessly from business service reports to infrastructure and application layer investigation and remediation. The result? Overarching visibility into your services and the ability for your organization to operate with agility.



*Anytime our systems are down, we can't complete customer transactions and could potentially be losing millions of dollars. Splunk's machine learning capabilities enable us to forecast, predict and specifically avoid those potential transaction failures in real time.*

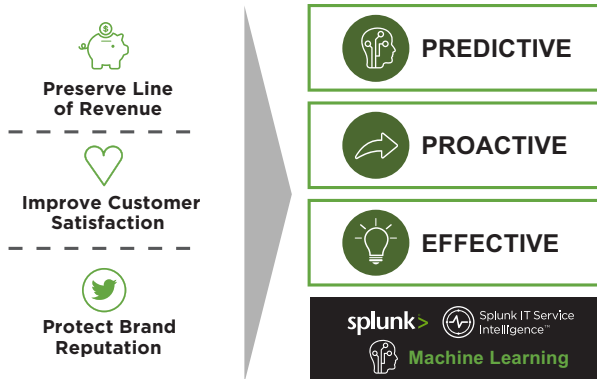
TransUnion<sup>tu</sup>

## Benefits of Predictive IT

Artificial intelligence is paramount to the future success of IT organizations. Getting started with artificial intelligence (AI) can seem daunting, although companies who don't adopt AI will eventually fall behind their competition.

AIOps solutions can collect all formats of data at scale. The platform then applies machine learning to their data to automate analysis and empower your IT teams to be more efficient and proactive by being able to get ahead of the problem. With an AIOps platform, you can better predict sources of downtime to proactively prevent and fix problems so you can:

- Avoid costly downtime and improve customer satisfaction
- Preserve line of revenue
- Protect brand reputation



To learn more about how AI and Splunk can help your IT organization, visit:  
[https://www.splunk.com/en\\_us/it-operations/predictive-analytics.html](https://www.splunk.com/en_us/it-operations/predictive-analytics.html)

