EMA

IT & DATA MANAGEMENT RESEARCH,
INDUSTRY ANALYSIS & CONSULTING

The modern IT outage: costs, causes, and "cures"

October 2022 EMA eBook
Prepared for BigPanda
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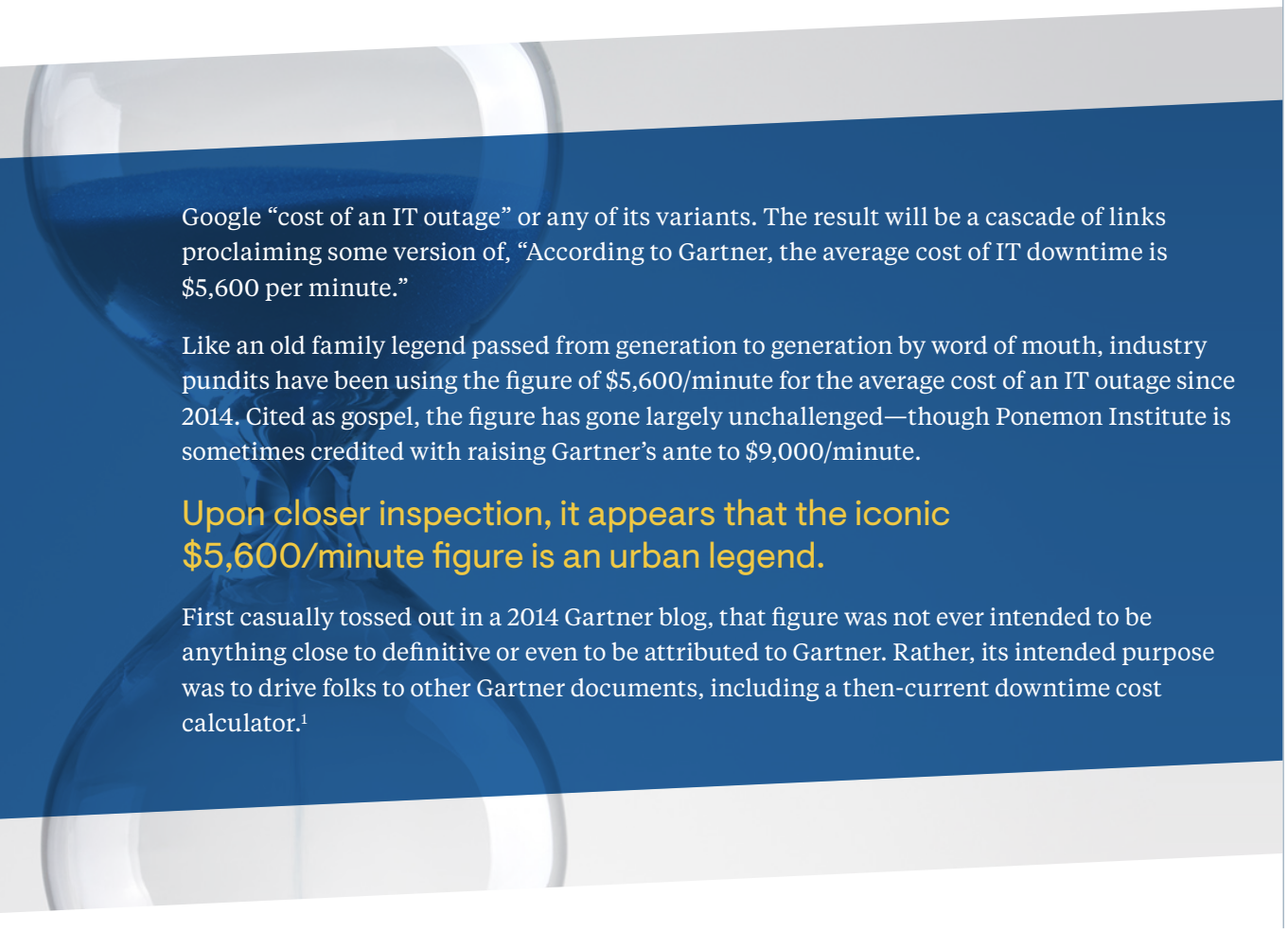
Table of Research Findings

The Google challenge/research overview



Google “cost of an IT outage” or any of its variants. The result will be a cascade of links proclaiming some version of, “According to Gartner, the average cost of IT downtime is $5,600 per minute.”

Like an old family legend passed from generation to generation by word of mouth, industry pundits have been using the figure of $5,600/minute for the average cost of an IT outage since 2014. Cited as gospel, the figure has gone largely unchallenged—though Ponemon Institute is sometimes credited with raising Gartner’s ante to $9,000/minute.

Upon closer inspection, it appears that the iconic $5,600/minute figure is an urban legend.

First casually tossed out in a 2014 Gartner blog, that figure was not ever intended to be anything close to definitive or even to be attributed to Gartner. Rather, its intended purpose was to drive folks to other Gartner documents, including a then-current downtime cost calculator.[1]

Enter BigPanda.

Slashing downtime is a core value proposition of BigPanda’s AIOps event correlation and automation platform. How can its potential customers cost-justify this cutting edge investment with Stone Age numbers?

Enter EMA.

BigPanda wanted to take a purposeful approach to the topic of IT outage cost. It retained Enterprise Management Associates (EMA) to conduct field research that would provide a more thoughtful basis for talking about modern IT outage costs.

EMA surrounded the specific cost question with other inquiries that give substance and nuance to cost considerations. The result is a defensible (though not definitive) look at the cost, causes, and “cures” of an IT outage based on the responses from 300 global managers, directors, VPs, and executives.[2]

[1] “The Gartner Blog Network provides an opportunity for Gartner analysts to test ideas and move research forward. Because the content posted by Gartner analysts on this site does not undergo our standard editorial review, all comments or opinions expressed hereunder are those of the individual contributors and do not represent the views of Gartner, Inc. or its management.”

[2] North America, EMEA, and APAC companies were evenly distributed across those ranging in size between 1,000 employees through 20,000+ employees in a wide mix of industries.

Anatomy of the modern IT outage

Average cost/minute

If the average cost of an IT outage is not $5,600, what is it? This research offers a new average[3] specifically for unplanned outage downtime—an average that is defensible, not definitive:

$12,900 per minute

Average cost/minute and hour by company size

This average can be better understood by looking at its components. EMA first calculated the average cost/minute for five different organizational size categories before adding those averages together and dividing by five. Math explains the appearance of precision in each average. As it turns out, no single category sported the overall average cost.

Outage cost/minute by company size:

1,000-2,500 employees | 2,500-5,000 employees | 5,000-10,000 employees | 10,00-20,000 employees | More than 20,000

Outage cost/hour by company size (cost/minute x 60):

1,000-2,500 employees | 2,500-5,000 employees | 5,000-10,000 employees | 10,00-20,000 employees | More than 20,000

[3] Participants were asked, "How much does an unplanned outage usually cost per minute?" The costs, reported in dollars, include British pound sterlings converted using the average 2021 rate of $1.38.

Outage inequality

Of course, not all outages are created equal. Some cost a fraction of the average, while others make the average pale in comparison to a specific occurrence. However, the progression of averages naturally scales with company size for a few size-related reasons: potential revenue at risk, number of people potentially impacted (employees, customers, partners), and exposure to fees, penalties, and litigation.

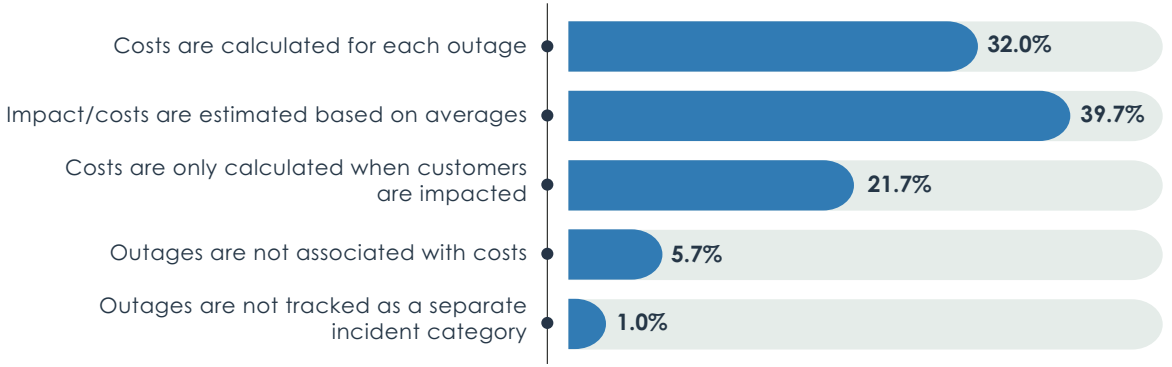
The larger the company, the more there is to risk in any outage. However, smaller companies are at greater risk of being substantially damaged by losses. They have fewer resources to recover from hits to corporate health.

Reporting the cost

When considering the averages reported in this study, it's useful to keep in mind that research participants brought their own experiences to the process. There was no formal definition of which factors should be considered in calculating outage costs, or even if they were calculated at all.

Asked how outage costs are reported, the majority of responses were roughly split between calculating and estimating costs. A surprising 22% only calculate costs when customers are impacted, while a bewildering 6% stated that outages are not associated with costs.

"What best describes your organization's approach to reporting the costs of an outage?"

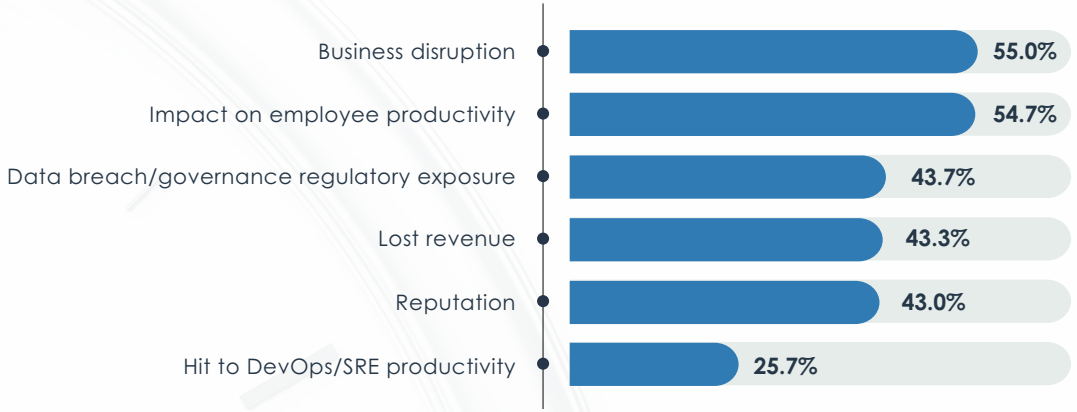


The number of organizations that report outage costs by the hour is roughly double the number that report by the minute. By a similar margin in a separate question, organizations report having a process for calculating the cost of each significant outage, outnumbering those who say that "costs are mostly estimates of impact that are generally accepted as accurate." Interestingly, all C-level respondents believe that the costs are calculated, not estimated.

Elements of outage cost

Of the many factors that go into an outage's cost, most people would expect lost revenue to top the list. It certainly is on the list, but it is in a three-way tie for second place with data breach/governance regulatory exposure and reputation. Topping the leader board are business disruption and impact on employee productivity. Arguably, revenue can be replaced. Time—in business as in life—cannot.

Which factors are most important to your organization when calculating the cost impact of an outage?



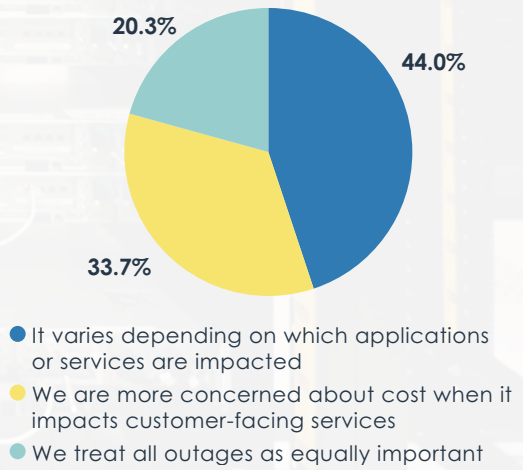
Outage impact and duration

Asked to characterize some qualitative aspects of outage costs, only 20% of respondents stated that all outages are treated as equally important. One-third were clear that costs matter most in their organization when outages are customer-facing, and a healthy 44% weigh the cost of an outage based on which applications or services are impacted.

Likewise, when asked, **"How would you characterize the relationship of outage cost to its duration?"** there was almost a 50/50 split between those who say the service impacted matters more than the duration of an outage and those who see a direct correlation between outage duration and cost.

An interesting side note is that a comparison of cloud and data center outage costs was pretty close to a tie. Of the respondents, 28% found cloud provider outages to be less costly than data center outages, while 34% said just the opposite. Another 29% said the costs were roughly equal and 8% don't distinguish between outage types.

Which statement best describes the cost of an outage in your organization?

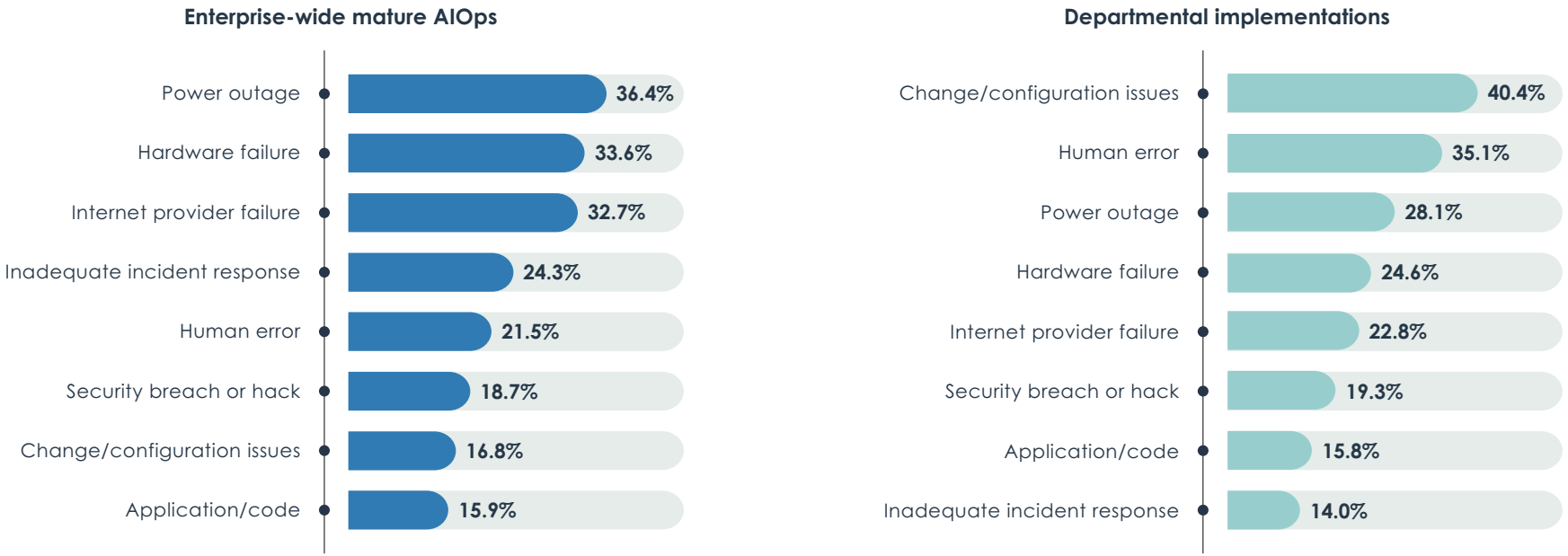


Most common causes of outages

Unplanned outages seem to strike without warning. In reality, there is more control at work than is apparent at first glance. Compare the answers of two distinct groups: those with mature, strategic, enterprise-wide AIOps and automation implementation, and those that are implementing AIOps and automation on a departmental basis when asked to name the most common cause of an outage.

Those with mature, enterprise-wide implementations were most challenged by external forces, presumably in large part because they have controlled that which is in their control using AI and automation. By contrast, the departmental cohort have outages fueled by change/configuration issues and human error (more on AIOps later).

What is the most common cause of an outage? Select the top two only.



The significant IT outage

What constitutes a significant outage?

In preparation for asking the cost of the last significant outage, respondents were first asked to define a significant outage.

What constitutes a significant IT outage (unplanned) in your organization?

Clearly, there is no single definition of a significant IT outage. However, when "any degradation in service quality" (17.7%) is added to the all-inclusive "all of the above" (20.7%), the frontrunner is anything that interferes with business as usual (38.4%). One hundred percent of C-level respondents agree.

In a race between people (productivity and experience) and revenue, people win out. That finding is consistent with EMA research across all practice areas and has trended strongly since the normalization of work from anywhere.

Average cost of a significant outage

The question, **"How much did the most recent significant outage cost your organization?"** (asked in local currency, reported in dollars) produced an average of all company sizes:

$1,477,800

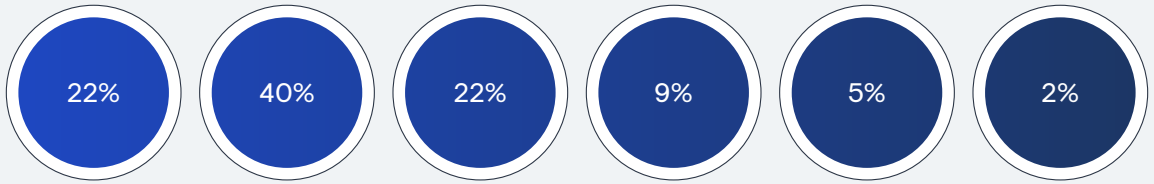
Cost of last significant outage by company size

Cost by company size	1,000-2,500 employees	2,500-5,000 employees	5,000-10,000 employees	10,00-20,000 employees	More than 20,000
Calculated duration in hours	2.3	1.7	2.9	1.4	2.0

Once again, there was a size-dependent progression of costs. The duration was calculated for each organization size category by dividing significant outage cost by the reported average cost/minute. The average calculated duration is two hours, plus or minus.

Significant outage duration

Participants were asked, **"How long does a significant outage usually last?"** Responses ranged from fewer than 30 minutes to in excess of one day. It averaged out to around an hour.



Fewer than 30 minutes | 20 minutes to an hour | Up to 2 hours | 2-4 hours | Half a day or more | A day or more

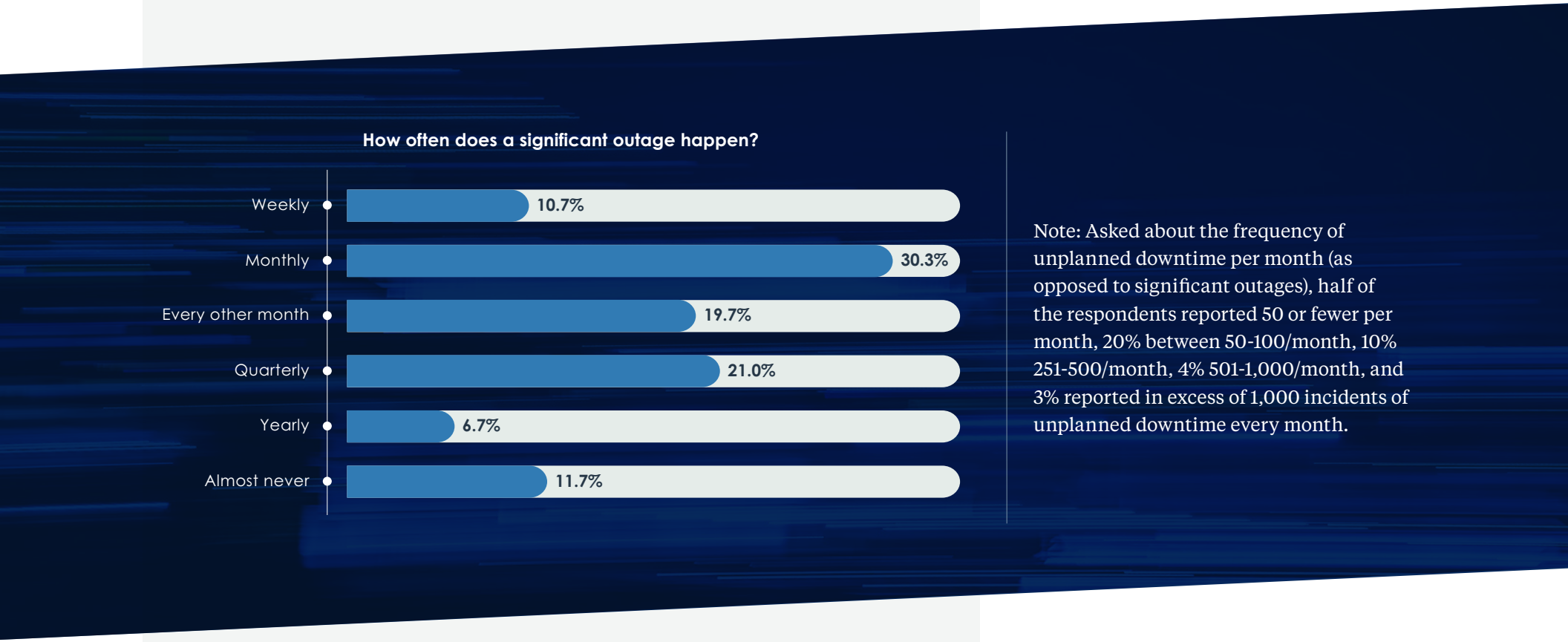
This estimation of outage duration is significantly more optimistic than the duration calculated using the cost of the last significant outage and cost/minute averages (one hour vs. two hours). That difference is more likely to be a reflection of the human tendency to soften the edges of remembered trouble.

In support of this theory is the fact that the research participants from the ITOps side of the house uniformly stated the duration of a significant outage closer to the two-hour range. The team charged with finding the cause of an outage and fixing the problem is less likely to have cheery memories of time.

Significant outage frequency

Although the frequency of significant outages ranged from a hair-raising "weekly" to the other-worldly "almost never," 71% of the respondents clock in between every 1-3 months.

Depending on company size, even one significant outage per year can cost millions of dollars. At the low end, if a company of 1,000-2,500 has a quarterly significant outage at a cost of $257,545 each, that $1 million loss can be the difference between annual bonuses and layoffs.



Note: Asked about the frequency of unplanned downtime per month (as opposed to significant outages), half of the respondents reported 50 or fewer per month, 20% between 50-100/month, 10% 251-500/month, 4% 501-1,000/month, and 3% reported in excess of 1,000 incidents of unplanned downtime every month.

What comes next?

Causes of increased outage frequency and impact

A perfect storm of complexity brings traditional IT tools and processes to its knees. The scope and pace of change exceed human capacity to control.

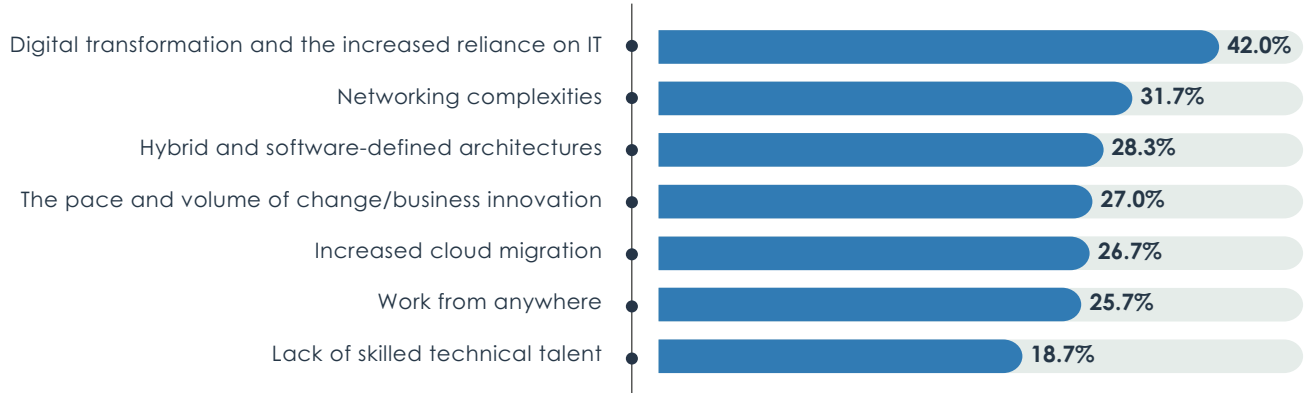
Continual business innovation and increased reliance on IT in the age of digital transformation puts IT center stage for performance and availability. Add work-from-anywhere and new technologies to the complexity brew and it is no surprise that outages are increasing in duration, cost, and impact.

Research participants were quick to identify digital transformation and the increased reliance on IT that it brings as the top causes of increased outage pain. However, there is plenty of blame to go around.

Networking complexities ranked high on the wall of blame. In fact, EMA's recent worldwide research, "Network Management Megatrends 2022" noted that, although there is a proliferation of management tools and technologies, network management effectiveness has dipped for the first time since this biannual study began.

Users reported fully 31% of all service problems last year before the ops teams were able to roll. Although duration and MTTR tend to grab the headlines in an outage, time to awareness is the quiet side of complex service issues that only AI and automation can address.

Outages are increasing in terms of duration, cost, and impact due to which of the following factors? Select the top two only.

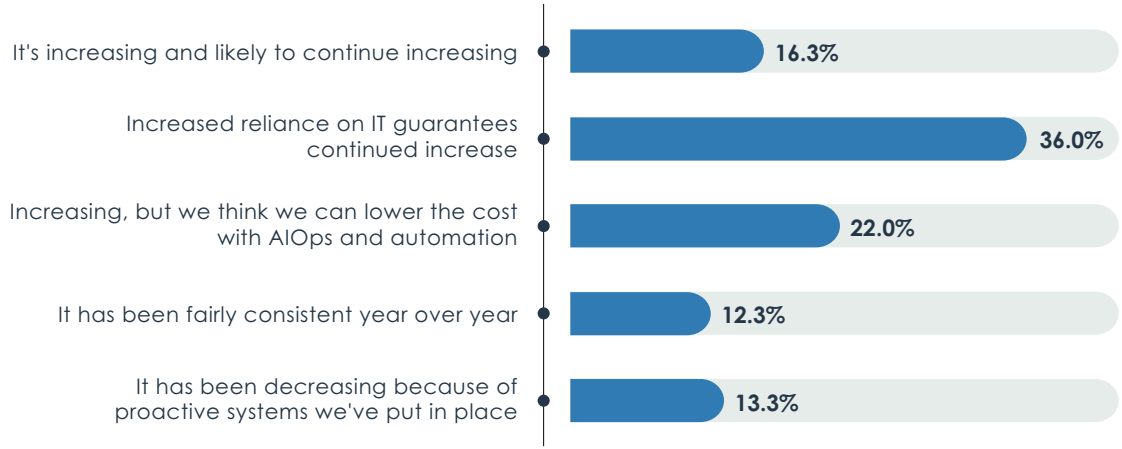


Are rising outage costs unavoidable?

Facing the future, IT leaders were not overly optimistic about rising costs of an outage. More than half of the respondents took a somewhat fatalistic view: 16% felt that outage costs are likely to increase, while 36% of their gloomier colleagues believed that continued increases are guaranteed.

A forward-looking 35% of respondents take a different view. For them, increased outage costs are not inevitable. A healthy 22% plan to stem the tide of rising costs with AIOps and automation, and 13% report that proactive systems have allowed them to actually decrease outage costs.

Which statement best describes the cost of an outage to your organization?

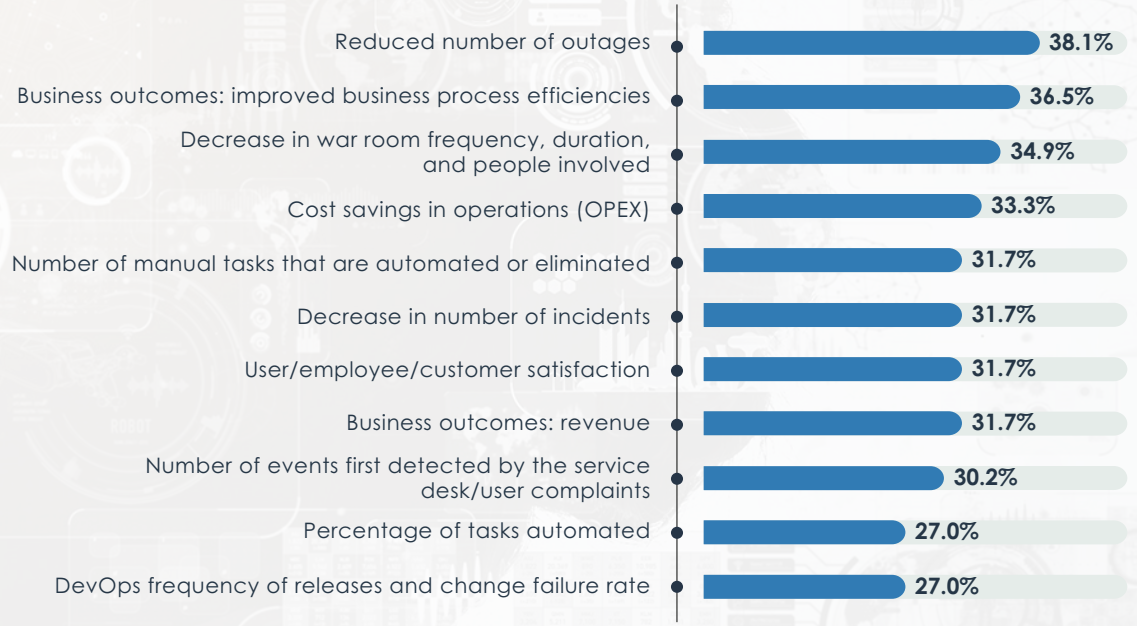


AIOps and automation are no “cure” for IT outages, but they are powerful weapons in the battle to minimize the cost, duration, frequency, and impact of those outages.

AIOps success metrics

In a recent research initiative, "AI(work) Ops," EMA probed the practical side of AIOps as implemented by 400 global organizations. Reduction in the number of outages topped the list of measures of AIOps effectiveness. However, that list includes other outage-busting benefits, including automation and reduction in war room frequency, duration, and people involved.

What are the top metrics used to measure AIOps effectiveness in your organization?



AIOps beyond outages

The combination of AI/ML and automation has obvious—and often dramatic—impact on unplanned outages. It plays directly into the ongoing ability to identify, interpret, and address incidents before they ever have the chance to become an outage. Asked, **"If you could choose one thing to do really well, what would have the biggest positive impact?"** 60% of all respondents answered: **"Proactive response to incidents before they become outages."**

At the end of the day, AIOps value goes far beyond job #1 of avoiding and minimizing outages. EMA consistently finds that well-implemented AI and automation capabilities directly improve productivity, quality of service, and soft business benefits that defy quantification.

In this initiative, *60% of the organizations with mature, strategic AIOps implementations reported the quality of IT service delivered by their organization as "outstanding."* In comparison, only 28% of those early implementations could say the same.

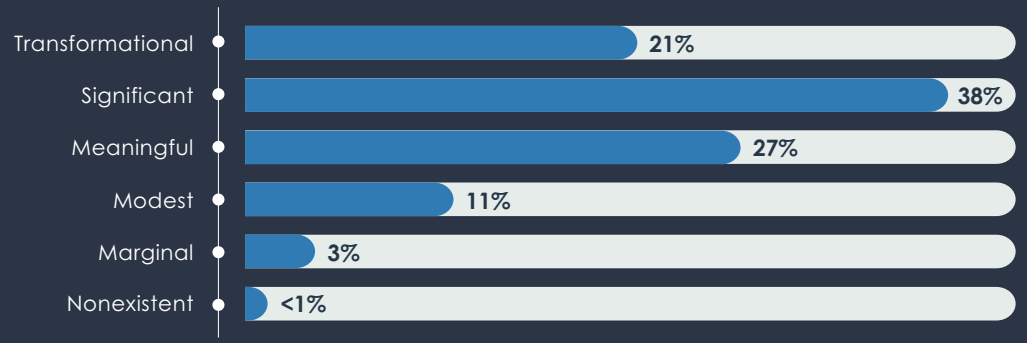
AIOps and its companion, automation, strengthen IT/business alignment. In a recent study, 400 IT leaders were asked to describe the impact of AIOps on the relationship of IT and the business. The response was almost universally very positive (86%). In fact, given three quite positive choices, fully 21% chose the superlative "transformational."

The reason that AIOps has a significant impact on the IT/business relationship is multi-threaded:

1. It improves the quality of IT service delivery
2. Performance, availability, and user experience all get better when outages decrease
3. Automation and AI increase operational effectiveness and decrease costs

IT/business alignment is an AIOps outcome because better service at a decreased cost is a guaranteed win in every industry, at every level of an organization.

What impact has AIOps had on the relationship between IT and the business it serves?



EMA perspective

Left unchecked, outages will continue to grow in an endless loop of cost, duration, and impact that is fueled by complexity, digital transformation, and the rate of business innovation. Is $12,900 per minute the new $5,600?

The modern IT outage is personal.

Averages just don't matter much when an organization is suddenly offline. On the other hand, the averages surfaced in this research offer a quantitative voice in the fight against complexity. Top-performing organizations calculate the costs of their outages, taking into consideration the specific factors that matter most to their corporate well-being. They don't stop at reporting the costs: they work at stopping them.

The modern IT outage is under attack. The weapons of choice are AIOps and automation.

Although there is no "cure" for IT outages, AI and automation have a strong track record of reducing outage frequency and cost. Together, they strike at the primary, controllable causes. In this research alone, 23% of those respondents with mature AIOps implementations reported an average duration of a significant outage at less than 30 minutes. Otherwise, the average reported was an hour plu. The average experienced was two.

The very high correlation between AIOps/automation implementation and outstanding IT service quality makes common sense. When an organization can consistently intercept an issue before it can cause a problem, outages are slashed. After all, the best outage duration is the one that never happens.

A word from the BigPanda team

BigPanda keeps businesses running with AIOps that transforms IT data into insight and action. With BigPanda's AIOps platform, businesses prevent IT outages, improve incident management, and deliver extraordinary customer experiences.

Without BigPanda, IT Ops, NOC, and DevOps teams struggle with a tsunami of data and highly-manual, reactive scale, complexity and velocity of modern IT environments. This results in painful outages, unhappy customers, growing IT headcount and the inability to focus on innovation.

BigPanda's AIOps Event Correlation and Automation platform helps Fortune 500 enterprises such as Intel, Cisco, United, Abbott, Marriott and Expedia take a giant step towards Autonomous IT Operations. BigPanda is backed by Advent International, Insight Partners, Sequoia Capital, Mayfield, Battery Ventures, Glynn Capital, Greenfield Partners and Pelion.

Visit www.bigpanda.io/take-a-tour/ to see how BigPanda turns IT noise into insights and automates incident workflows

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