

Predicting the Costs of Downtime

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In the broadest sense, downtime is a period during which a company's business is interrupted. The idea is simple enough in principle, but the results—and the solutions—are invariably complicated. In today's environment, significant downtime is virtually synonymous with IT problems, and can be triggered by a multitude of factors, both internal and external. Downtime affects each organization differently, shaped by such factors as the company's line of business, and whether it is a service-based, product-based, brick-and-mortar, or online operation.

By its very nature, downtime is dangerously unpredictable, and can impact many areas of a business, as shown by the figure below. You might think that, after decades of constant technological advancement, and with the emergence of increasingly efficient data centers, not to mention the expanding availability of cloud-based services, the costs of downtime would be going down. Actually, the reverse is true. As IT complexity rises, the expense of restoring operations increases as well.

In recent years, many major companies have suffered calamitous outages, with significant damage to their reputations. Losing credibility in the eyes of their customers, potential customers, vendors, and

with the public at large, has proven to be at least as expensive as the harm to operations. As a result, the cost of downtime has become the subject of intense scrutiny. Businesses want to know how much downtime is likely to cost them.

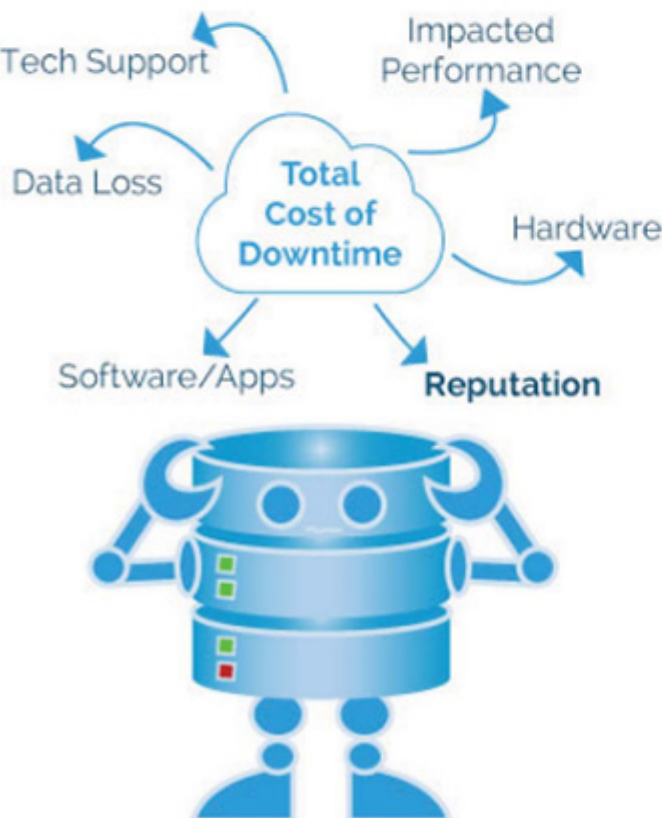
In 2014, Gartner estimated IT downtime for large enterprises to cost an average of \$5,600 per minute or \$300,000 per hour. Other studies have placed the average cost even higher. According to CA Technologies, the cost of downtime is estimated at \$55,000 per year for small business. Other studies looked at very large businesses and calculated the annual cost to be upwards of \$1 billion. Obviously, such estimates do not claim to precisely predict costs for specific businesses, but they do serve to illustrate how elusive a true evaluation of downtime costs can be.

IT-driven downtime is particularly damaging to corporate reputations when it is caused by unforced errors, as opposed to acts of nature, the mischief of hackers, or other external reasons. When a company goes dark temporarily because of internal blunders—mistakes it should have been able to avoid—the world takes a decidedly dim view.

When it comes to newsworthy downtime episodes, the most infamous year up to now was 2011, during which a cluster of major corporations made headlines by being unable to serve their customers for long intervals. The companies included Amazon EC2 and RDS (four days), Bank of America (six days), BlackBerry (more than 24 hours), Google Gmail (two days), Intuit (two to five days, depending on the source), Microsoft email services (with instances ranging from six hours to three days), Netflix Streaming (four to six hours), and Yahoo Mail (one day). In most cases the causes were either unexplained or were attributed to foggily described system malfunctions. All of the companies experienced harm to their reputations, made worse by their sketchy responses.

These scenarios continue to be repeated. For example, on July 20, 2016, as this article was being prepared, Southwest Airlines experienced a series of long flight delays caused by what the company referred to simply as "glitches." The media coverage concentrated on the exasperation and anger of hundreds of passengers stuck in airports around the country.

Looking at the possibility of downtime, managers want to know how much the ensuing problems would cost. As we have seen, damage to reputations is to be feared, not least because it is not measurable in advance, but the other expenses—hardware,



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software/apps, data loss, tech support, and impacted performance—can be forecast.

Before an informed assessment of an organization's potential downtime costs can be made, a careful, detailed review of the company's operations is necessary for identifying and evaluating risks and opportunities. This is a time-consuming and painstaking set of tasks, but the time and effort spent in this round of analysis is always a worthwhile investment.

The first step in calculating the true cost of downtime is to make a list of the tangible technology components that are critical to the company's day-to-day operations. These can include software; applications; email platforms; ecommerce; CRMs; cloud-based applications and tools; hardware such as servers, laptops and workstations; and more.

The next step is to establish units of measurement. How does one hour of unplanned IT downtime impact one employee? Or one client? Or one potential customer?

Next, it is necessary to determine both employee productivity costs and system recovery costs. These

can be plugged into RenovoData's simplified "downtime calculator" (<http://www.renovodata.com/downtime-calculator>) to come up with reliable baseline numbers.

Understanding the potential costs of downtime is only the opening move toward its prevention. Clearly, a proactive approach to the problem is the best strategy for any company to employ. If action is taken only after an interruption occurs, the recovery time will be longer, more stressful and more expensive than if that company had taken the time to plan ahead.

The most effective tool for preventing downtime is a carefully planned data backup system, as discussed on the same web page as the RenovoData downtime calculator.

Estimating in deep detail the potential costs of downtime, analyzing the nature of all potential sources of problems, and setting up robust methods for preventing them are all complex projects that are essential tasks for 3PLs.

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