



Do You Need Managed Availability?

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文章简介：本文分析了全球化浪潮、虚拟公司的出现、供应链的扩展和电子商务的兴起对信息系统可用性提出的新要求。深入分析了可用性的内涵以及分析可用性需求时需要考虑的因素。



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Times have changed. Information is critical, and the ways of doing business have evolved dramatically to meet 21st century requirements. This new business landscape has significantly increased our



reliance on computers and technology. And now, our reliance has driven a new requirement — a universal user expectation — that all this information be readily available whenever and wherever we want it. Evaluating this expectation and thinking about managing such availability are therefore not matters of if, but when.

New Paradigms

Today, information technology is viewed as a key infrastructure, and data is seen as a competitive advantage to the organization. Sales holds meetings with customers around the globe (and round-the-clock), marketing holds “Webinars” and manages information flow to a global variety of audiences, executives brief analysts located on every continent, and customers require that customer service runs a 24-hour shop.

The whole notion of a corporate computer user has morphed into many new classes of system users across an enterprise, including actual employees, contractors, consultants, suppliers, vendors, customers, and prospects. Data and applications belong to the entire enterprise and must be available to any user whenever and wherever needed.

This is the second of an eight-part series based on *7 Questions: Issues Concerning Managed Availability*, a booklet published by Lakeview Technology and available for download at www.lakeviewtech.com/7questions

Systems based upon silos of corporate data and departmental applications have been replaced with integrated ERP, CRM, and SCM solutions using Web

browsers as a front end. Data is information, and its value, its competitive advantage, is directly proportional to its accessibility.

This paradigm is complicated by the fact that, in many instances, the IT department no longer determines functionality levels and policy. This responsibility now belongs to the business units and may vary widely across a company. Sales, marketing, services, production, and operations have all determined which applications are business-critical to their pieces of the enterprise and have established requirements for their availability. These are not typically uniform among the business units, but are driven by demand, flexibility, and ROI.

Such developments in the business environment are not limited to global organizations, the Fortune 1000, or Web-based retailers. In fact, they affect every business, small and large, in some way.

When, for whatever reason, there is no access to data or applications, the system is down, resulting in downtime. Many trends have contributed to the mounting impact of downtime and system availability on profitability, including globalization, the virtual office, the extended supply chain, and e-commerce.

Globalization

An important trend driving the need for increased availability is globalization. Vastly improved communications, low-cost, high-speed travel, and reduced transactional barriers to business have opened new markets and accelerated international business. Today, any company can reach a global market.

According to the World Trade Organization, world merchandise trade grew by an average of 6.5 percent annually between 1990 and 1999, while the annual growth in the production of merchandise averaged only 2 percent. During the same period, exports of services grew worldwide by an average of 6 percent per year. These statistics make it clear that international trade is fueling much of the growth in worldwide wealth.

Because customers, employees, and suppliers located on one side of the planet are not willing to shop, work, or do business only during the nine-to-five hours of a company on the other side of the planet, application availability and data availability have become critical issues for companies doing business outside their time zones.

In the past, system maintenance could be scheduled during off hours and the cost of any unplanned outages during that time would be minimized, if they were felt at all. Today, we live in "Internet Time," with a 24-hour clock and no "end of day." It's always 10 a.m. somewhere in the world, so planned or unplanned downtime at any hour is very costly for the global enterprise.

The Virtual Corporation

According to recently published statistics, 35 percent of the workforce is mobile. This number represents all types of companies, large and small, global and local. This statistic is shaped by flexible schedules, new ways of working, and organizational goals to bring workers closer to customers.

This number also represents users requiring access to corporate information (data and applications) from outside the company's walls. Demand for access comes at all hours, across many different telecommunications media, and at times that correspond to getting the job done locally.

The Extended Supply Chain

As noted above, the corporate user has taken on a greatly expanded identity to include contractors, vendors, and suppliers. It is in the best interests of a business to drive down costs and improve customer satisfaction. To achieve this goal, good communication that assures pricing, quality, and timely delivery of products is required. Anyone involved in the supply chain must be part of the process and kept "in the loop."

But "anyone" could be anywhere, in any time zone, speaking in any language

and working on any computer system. It is no longer just one issue but a complex matrix involving many disciplines. Addressing the matrix and providing methods to integrate these extended users, assuring their access to critical information impacting business success, becomes a daunting task.

e-Commerce

Despite anxiety over the "dotcom meltdown," an IDC study suggests that consumer e-commerce spending totaled \$118 billion worldwide in 2001, with more than 25 percent being directly driven by teens. That's just the business-to-consumer market. According to a Cisco-funded study by University of Texas researchers, the Internet as a whole generated an estimated \$830 billion in revenue in 2000. The Internet economy, according to Gartner, exceeded \$1 trillion in 2000.

Whatever the numbers, e-commerce is big business. On the Web, customers expect to shop at their convenience, making 24/7 operations mandatory. With competitors just an instantaneous click away, customers are much more likely to go elsewhere when a site can't serve them right away. Sales and customers are lost in a heartbeat. Conducting transactions entirely online also removes the human interface, which eliminates the opportunity for an employee to try to hold on to customers until the system comes back online. Downtime is very expensive.

Reliability Is Not Availability

One factor in dealing with downtime is reliability, the hardware-based metric of mean time between failures. A computer system may be up and running just fine, doing a database re-org or an end-of-day batch run. But the system is not available to users. This is downtime, and it is the root of the confusion for many IT managers. Effectively managing availability requires both reliability and availability solutions.

Appropriate reliability measures are not obvious. A CPU spec sheet may quote 99-percent reliability, but that does not mean that the system it powers will be down only 1 percent of the time. Systems depend on more than just the CPU. The

disk drives, power supplies, networking gear, and other hardware and software must also be functioning. Standard statistical analysis suggests that the reliability of a system that depends on 10 independent components, each of which is 99-percent reliable, will be 0.99 raised to the power of 10, or about 0.9044. This hypothetical system can be expected to be down due to some hardware failure almost 10 percent of the time. In a 24/7 operation, that would translate into more than 837 hours — almost 35 days — of downtime.

Hardware reliability is not the only cause of unexpected downtime. Power failures, earthquakes, floods, fires, and severe lightning strikes can also shut down a system, resulting in unplanned downtime. Unplanned downtime is usually the most feared because, especially when caused by crashes due to system overload, it is more likely to occur when it will do the most financial damage. Clearly, hardware reliability statistics say nothing about the frequency and duration of these types of outages.

However, unplanned downtime is relatively rare. Far more common is planned downtime. Planned downtime outages occur when systems are taken offline for activities such as hardware and software upgrades or database backups and reorganizations.

The cost per hour of downtime represents only half of the business-impact equation; the frequency and the duration of these events represent the other half. Planned downtime may be less costly per hour because it can be scheduled for slow periods, yet it may result in substantially greater total costs due to significantly higher frequency.

The components of downtime cost can be broadly categorized as lost wages and productivity, lost revenue, recovery costs, intangibles and, potentially, legal and regulatory costs. A future article in this series will look specifically at the downtime cost components and offer suggestions for calculating them.

Do You Need Managed Availability?

While they underscore a common need, external statistics are of little use to any company or enterprise making managed availability decisions. Knowing that the industry-average downtime cost is, for example, \$250,000 per hour offers no comfort to a business facing costs of \$2.5 million per hour. These same averages also don't mean anything to a small business whose annual revenues are less than the statistical averages. (But the fact that over 90 percent of small businesses suffering a major data loss are out of business within three years may make a big impression on some small-business executives!) Averages and statistics serve only as a wake-up call. What matters most are the specifics for the enterprise under consideration.

Evaluation of specific needs should start with the most basic question: Do you actually need to evaluate managed availability for your enterprise? To find out, the following considerations should be addressed:

- Do you know the difference between reliability and availability?
- Does your company have adequate time each day for all application and system upgrades, batch runs, and system/data saves?
- Is your business in an area subject to natural disasters (flood, tornado, hurricane, earthquake, fire, blizzard)? How many transactions can you afford to lose without significantly impacting your company?
- Do your operations depend on an integrated ERP system, e-commerce, or e-business? How long can you afford to have those application servers offline and unavailable?
- Does your company have employees who are remote and/or outside your data center's time zone, and who depend on e-mail or a VPN for business-critical information? Do your company's operations depend on an extended supply chain?
- Have you experienced downtime, planned or unplanned? Do you know the

difference between the two? Do you know the impact?

- Is part of your job performance measured by system availability?

If you answered "yes" to even some of the questions above, you would be well served by further evaluating the managed availability requirements for your organization. As the market continues to evolve and mature, you will be forced to address the issues. It is only a matter of time.

In the next article, we will discuss how the relationship between data and applications influences the development of a managed availability plan.

About the Author

Bill Merchantz is the founder, president, and CEO of Lakeview Technology, a provider of managed availability software solutions. He has many years of hands-on experience as a customer/manager of IT solutions.