



Slow Death By Spinning Wheels

Why slow applications¹ are losing companies significantly more than they realize – and what can be done to stop it.



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ABSTRACT

“Loading please wait...”

These 3 words are enough to make anyone fall into an instant state of intense irritation. When employees or customers are forced to wait for an application to load, productivity decreases, stress increases, and reputation (and bottom line) of the company can be put in jeopardy.

So many businesses have accepted the “spinning wheel of death” as the way things are; slow “networks” or the applications on those networks are an obnoxious albeit normal part of doing business. It’s often seen more as an annoyance than a business problem and tends to get pushed way down on a priority list of issues to address, if it’s ever addressed at all.

But few businesses have taken an objective look at how much the “status quo” of waiting for applications is actually impacting their bottom line. And when you start crunching the numbers – it might be more of a financial burden than you realize.

The paper explores the true financial impact of slow applications on businesses, why this issue is so rampant, and what can be done to stop it.

1. “Application” can mean a lot of things to a lot of people depending on the business and context. For the purposes of this paper, we will refer to an application as any program used by an internal or external (customer) user to perform a function. A few common examples would be the Microsoft Office suite, e- mail, CRM, ERP, CAD, but can refer to anything that a business relies on to perform critical functions. These can either be hosted on premise or in the cloud.

BUSINESS' SILENT KILLER

They say stress is a silent killer. A 2015² study by the Harvard and Stanford business schools have found that health problems stemming from stress can lead to fatal conditions that account for approximately 120,000 deaths per year.

That's more than diabetes or Alzheimer's.

But, although it is rampant in our society, and can even be fatal, stress is just accepted as part of the day in and day out of the daily grind. In other words, something that is considered normal and even acceptable behavior can literally kill you.

Superimposed in a business context - slow applications do to your bottom line what stress does to your body. If not dealt with, they can slowly and silently KILL your business.

Waiting for the "network" to speed up, a website to load, something to happen after you click a button has become a "normal" part of doing business. But what is the cumulative effect over time? How many productive hours are lost over the course of a month, or a year? How many customers walk away less than satisfied with their experience and thinking twice before doing business with you again? How much money is lost?

It may be more significant than most businesses realize.

“LOADING... PLEASE WAIT...”

Nowadays, every business relies on a set of applications to stay productive and profitable.

Although it may not appear obvious on the surface, the success of every organization, from small businesses to the Fortune 50, is driven directly by the speed and reliability (i.e. "performance") of their applications or the technology systems those applications run on.

And application performance (or lack thereof) quickly trickles down to the bottom line.

Business' utter reliance on applications to drive revenue is irrefutable. In fact, a recent study by SolarWinds³ revealed that 94% of business end users said that application performance and availability affect their ability to do their job – 44% said it is absolutely critical.

The same study revealed that an incredible 38% of business end users have waited a full business day or more for performance or availability problems with business critical apps to be resolved, with 22% having waited several business days or more.

“LOADING... PLEASE WAIT...”

Take a moment and think about an application you use every day (email, Office, filesharing, etc.) What would happen if you were unable to access that application for 24 hours? For 48 hours? For 72 hours? What would be the implications be to your business? Your reputation? Your bottom line?

The average yearly amount lost by a company because of performance issues across North America and Great Britain was \$140,000⁴



**ONE HUNDRED
FOURTY THOUSAND**

Even a seemingly small level of underperformance can have a significant cumulative effect on productivity. A Forrester study⁵ revealed that applications that don't work as expected a mere 2% of the time creates a 45 hour working hour deficit over the course of a year.

Look at it this way: even if your applications are working properly 98% of the time, you are losing a full work week of productivity for all of your employees every year.

The bottom line (no pun intended) is that slow applications lose businesses money. When company applications are slow, employees get less work done, the IT department wastes time fixing problems and customers get a bad impression of the company. The performance of business applications drives the bottom line.

**SO WHY IS IT SO HARD
TO FIGURE OUT WHAT
THE PROBLEM IS?**



Before delving more deeply into the business implications of deteriorated application performance, it is important to develop an understanding of why applications slowdown in the first place.

WHY IS IT SO HARD TO FIGURE OUT WHAT THE PROBLEM IS?

Years ago, getting slow applications “back to normal” was fairly simple and straightforward. When something went wrong, the possibilities of what caused the issue were limited to a few systems that could be quickly resolved. But nowadays, IT systems have become extremely complex, built from numerous components, such as web servers, database servers, application servers, applications software, operating systems, networking software, networking hardware and many more, each of which is built from multiple components.

Long story short, it makes finding the source of the problem like looking for a needle in a haystack.

It quickly becomes clear that determining which aspect of the application is responsible for the slowdown requires a methodical approach and study of the state of hardware, network capacity and utilization, server applications, database servers and many other places in-between. Oftentimes simply determining the SOURCE, not to mention the root cause of the problem could take hours if not longer.

It takes an average of 7 hours for serious application problems to be completely resolved⁶



But surely IT is equipped with tools to troubleshoot and discover what is really going on? Right?

Yes. There are a plethora of excellent tools IT can use to examine performance of individual segments of the infrastructure; tools that will provide insights into the network, another into the database, another into the server, and so on.

The availability of tools is not the issue – in fact a recent study⁷ revealed that 87% of companies employ more than 6 management/ monitoring tools that they use to troubleshoot performance issues.

The issue then becomes not the absence of tools but the absence of actionable insight those tools provide. Used individually, it’s easy for them to miss the overall problem. The majority of organizations don’t have a “single pane of glass” that lends itself to that level of insight. This leaves IT to slowly stitch together a patchwork understand of what is going on using domain-specific tools, monitoring a web server or a database engine or the network in isolation. The AppDynamics study referred to this as “Franken-Monitoring.”

This inefficient process leads to finger-pointing in IT as each group insists that nothing is wrong with their hardware and software, resulting in additional wasted time and resources.

The cost of this so-called “franken monitoring” becomes exponential quickly.

WHERE THE RUBBER MEETS THE ROAD

HOW PERFORMANCE PROBLEMS AFFECT THE BUSINESS

Consider an example of the impact of a performance problem on business in the example of a hospital:

A medium-sized hospital has a .NET-based application for entering notes on patient records. For two days now, several times a day the response time in the application slows noticeably. The pauses between fields and screens are only a matter of seconds, but enough to make users of the system miserable. Doctors, nurses and technicians get aggravated at the behavior. Some put up with it and eventually enter their notes. Some give up and go do something else. In either case, patient service and discharges slow down.

Complaints to IT yield a “we know, we know, we’re working on it” response. Then it gets worse:

Wanting to get their work done, users start hacking solutions: typing notes into Windows Notepad or Gmail to copy and paste later when the forms application isn’t so messed up.

Managers start to panic when they hear about the Gmail trick, as it constitutes a HIPAA violation.

What’s IT up to?

IT department heads are in “War Room” mode, working to find the source of the problem. They can see the performance of the application drop for periods of time, but are at a loss as to what is causing it. They are trying to stay civil, but it’s not easy, and IT management has made it clear that nobody’s going home until the problem is fixed.

Troubleshooting is one of the things IT staff get paid for, but the less of it the better. Even when things are running smoothly IT has important work to do, so when things are running badly that work piles up. In the meantime, users don’t get access to services and systems they need, new employees don’t get their equipment or training, lost passwords don’t get reset. The hospital effects of the application slowdown are rippling through the business of the whole hospital.

Executives cited the following business consequences from poor application performance ⁸

DISSATISFIED CUSTOMERS

40%

MISSED A CRITICAL DEADLINE

36%

LOST CLIENTS

35%

SUFFERED NEGATIVE IMPACT ON BRAND

39%

SLOW PRODUCTIVITY

In modern IT-driven businesses, performance and productivity go hand-in-hand. The impact on productivity of the hospital workers who use the patient notes application is just the tip of the iceberg. Users all over the hospital are impacted. The slowdown in patient discharge is causing billing issues. The unavailability of IT for normal tasks is preventing some office staff from getting past simple problems, like an offline printer. This last problem is a manifestation of IT's productivity being ground to a halt.

The example may involve a hospital, but the situation clearly applies to any modern, medium or large-scale organization. Consider manufacturing, for example. A manufacturing process tuned to operate as efficiently as possible assumes a certain level of IT performance. Logistics fails if supplies are not available on time. A bottleneck tied to an underperforming IT asset can ripple back through the supply chain affecting other parties.

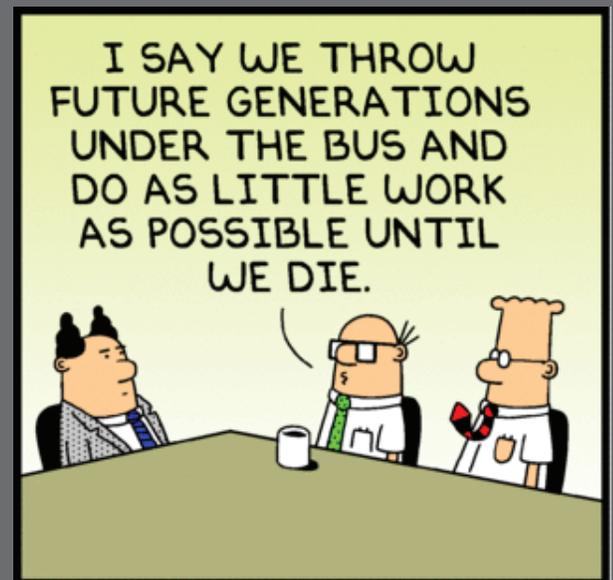
ANGRY CUSTOMERS AND PARTNERS

Nobody likes being a patient in a hospital, so anything that keeps them there longer than necessary or which delays their procedures and other care is an unwelcome development. In many cases the organization will have online retail operations which will be affected. In some cases, customers looking to buy something will get fed up and look for another place to buy it. A customer seeking service for an existing order who can't get a response from the site will feel cheated. The same situation may befall partners whose business is affected by the unreliability of the organizations' systems.

The bottom line is that if deficiencies in a company's systems impede the ability of customers and partners to do their work, then customers and partners have every reason to be angry.

Management should also not discount the effect on company morale of IT operating at less than peak. Employees, by and large, want to do their jobs well and need their computers and software to help them do so.

Nobody likes to get nothing done. Well, almost nobody.



YOU'VE GOT BIGGER PROBLEMS

Serious problems, will sometimes manifest as performance problems, possibly subtle performance problems that IT may be inclined to ignore.

But a performance problem could be the result of a component failing. More seriously, it could be a sign of a security breach. An attacker using the company servers and network to find and "exfiltrate" company data may not need a lot of horsepower to do so, but it could be enough to give away the attack.

GREAT, SO NOW WHAT?

My slow applications are losing me money across the board. Point taken. So how do I stop it?

The key is empowering IT with visibility. Having a complete, holistic view of the application in all places, it can quickly find the anomaly causing the problem.

The insights provided by a comprehensive Application Performance Monitoring (APM) and Network Performance Monitoring (NPM) system which takes monitoring information from all aspects of the system: servers, server applications, networking systems, outside data sources, and even end user experience is critical to solving performance problems before they impact the business.

This granular view of the entire system can look at the complete reach of the application, providing end-to-end visibility into its workings. It can trigger alerts at an early stage such that users may not even notice the problem yet.

And at the end of the day, better application performance means better business. In fact, in a recent study by Riverbed Technology,⁹ business executives believed that better insights into application performance would result in:



Businesses empowered with this level of visibility have saved hundreds of productive hours and millions of dollars by being able to discover and fix issues quickly, possibly before any users notice it.

But what about the small to med-sized business?

It would be remiss not to mention the budget issue. Unfortunately, every business loses money with this problem but the advanced APM/NPM equipment described above is generally only available to those with an enterprise-level budget. There are emerging companies that are beginning to provide this level of actionable data as a service to small-and medium sized businesses, providing enterprise-level insight without the need to purchase and maintain equipment. Technology companies are realizing this problem is prevalent across all sizes of businesses and the solution – is not continued trial and error multi-tool monitoring, it's enterprise level insights at affordable prices.

CONCLUSION

No matter how big or small your business may be, every business relies on applications for productivity and profitability. Any level of slowdown of those applications lose the business money.

Businesses which rely on their IT need to ensure that the performance of those IT resources is as good as it can be. With the complexity of modern systems and the volumes of data involved, tools that look at the application from end to end are necessary. IT professionals may have access to numerous quality tools that monitor performance of individual components, but these are no longer enough. IT needs to see the complete picture in order to do their jobs right.

Whether your business is a large enterprise that can purchase advanced APM/NPM infrastructure, or a small business that hires a consultant to provide the insights these tools can provide, knowing what is going on in your infrastructure will quickly reap positive bottom line benefits.

About Vista Solutions & Riverbed Technology



Vista Solutions works with business professionals and IT teams in small to medium businesses across Colorado that are frustrated that their slow applications, network or website is causing them to lose time, money, and customer trust.

Vista Solutions partners with application and network performance leader, Riverbed Technology, to help companies of all sizes quickly identify and resolve the root cause of the problem so that they can be more productive and profitable.

Since 2006, Vista Solutions and Riverbed have worked with multinational Fortune 100 companies in highly complex environments to save millions of dollars and hundreds of productive hours. Today, we are able to provide the same value to mid-market companies that was once reserved only to enterprise businesses.

If you are tired of your unreliable technology determining how productive and profitable you are, we may be able to help. [Click here to learn more.](#)

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