

**#1**

**THE ADVENTURES OF**  
**FLASH**

**HOW THE MILD-MANNERED SSD BECAME  
THE SUPERHERO OF STORAGE**



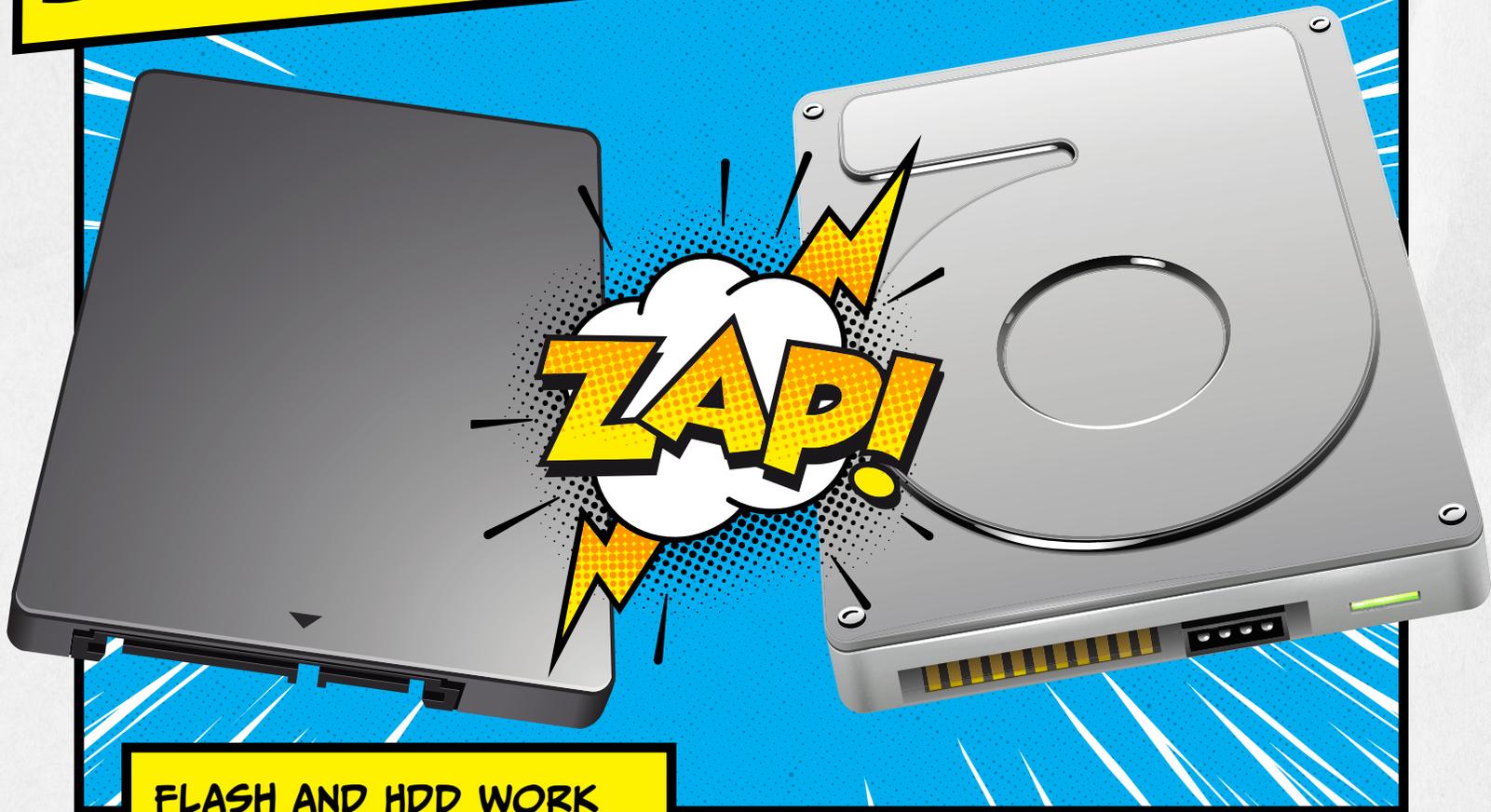
**O**nce upon a time, in a place called Planet I.T., hard disk drives ruled. Whenever data storage was needed, HDD was the automatic choice. Even though HDD was known for sudden crashes that led to catastrophic data losses, it still offered the best solution for storage and had longevity on its side.

Meanwhile, in the shadows, flash was quietly fine-tuning its skills and polishing its reputation. Even though it had higher initial costs, it showed that its solid-state drive (SSD), which allowed it to wear down rather than crash suddenly, could save the day.

And that was just the beginning. There was plenty more to love about flash, such as its quiet, stealth-like operations and its ability to keep its cool, even when handling large amounts of data. While many traditionalists still were wary of this newcomer, flash slowly began gaining acceptance... first by a handful, and then, as word spread, more and more businesses began giving flash a second look.

This is the true story of how flash has emerged as a true winner in the workplace — and is shaping the future of storage.

# DESPERATELY SEEKING STORAGE

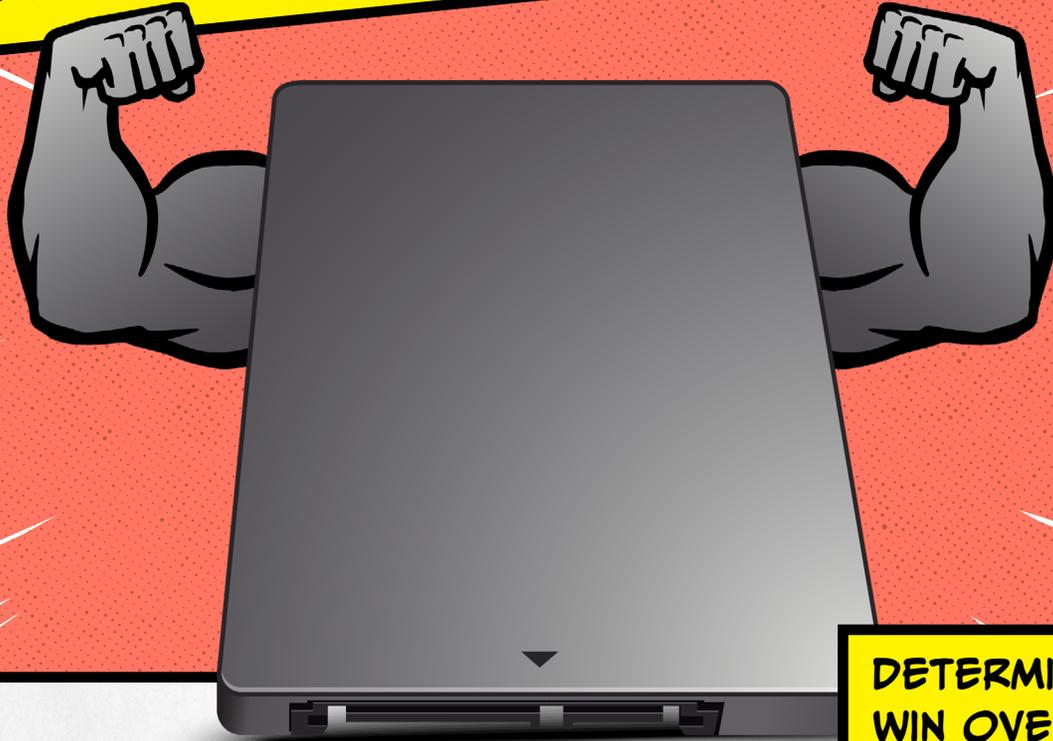


**FLASH AND HDD WORK AT A BUSINESS THAT NEEDS A STORAGE SOLUTION FOR AN IMPORTANT PROJECT. FLASH VOLUNTEERS, BUT THE BUSINESS OWNER CHOOSES THAT BROWN-NOSER, HDD, AND SAYS FLASH ISN'T READY FOR SUCH A BIG JOB.**

Storage has been a concern for businesses long before the age of electronics. But as data became digital, hard disk drives (HDD) emerged as the storage solution of choice. With a history that goes back at least to the 1950s, HDD was, for years, the only available option.

Flash-based solid-state drives (SSDs) were first introduced in the 1990s. Because SSDs are more streamlined and don't have the many moving parts found in HDDs, flash is, as the name implies, fast. But HDDs check the boxes when it comes to price and storage capacity. It's a less expensive form of storage but, because it stores its data on spinning platters, there's a limit to how small that storage can be. Those many moving parts also make it less durable.

# FLASH STARTS WORKING OUT



**DETERMINED TO WIN OVER THE BUSINESS OWNER, FLASH STARTS ADDING TO HIS CAPABILITIES.**

Adoption of flash technology has come about slowly, partly due to concerns about the cost and partly because businesses felt their HDDs were performing just fine. In 2010, [a survey of Fortune 1000 IT professionals](#) indicated that less than half of them had their sights set on purchasing SSDs.

But despite the concerns, less than a decade later, flash has given reluctant business decision makers many reasons to reconsider.

In addition to being lightning fast, flash storage systems are designed to be scalable, so they're naturally designed for growth. And, when flash is integrated into the storage array, all the applications are able to run on a common infrastructure, instead of operating in silos, which occurs in hard disk settings.

While speed and scalability provide a significant selling point, flash storage has many other advantages as well. Because the flash components are smaller than disks, they make fewer demands on space, which means less rack space is required to handle the same amount of storage. Flash drives can also enable users to consolidate more virtual servers, databases and enterprise applications into a single array.

**OH NO! HDD  
DROPS THE BALL!**



**JUST WHEN THEY NEED HIM MOST, HDD FAILS! YIKES!**



While HDDs were the go-to option for businesses for many years, they had limitations. HDDs are slower and louder than flash. They are power-hungry consumers because they require energy to spin a platter, which creates a need for systems to be cooled.

One of the big differentiators between flash and HDD is the failure rate of each one. With storage reliability being critical for businesses, the need for durability and performance capabilities puts each type of storage to the test.

While nothing lasts forever, HDDs and SSDs reach the end of life cycle in different ways, and that's where flash once again shows the upper hand. HDDs fail from things like motor failure or a read/write head hitting the disk and also become vulnerable from constant use. When they do, they typically crash with little to no warning, taking with them the information stored on them. Flash drives, on the other hand, wear out gradually and, since it's more predictable, data loss is completely preventable.

# FLASH TO THE RESCUE!



**BECAUSE SSD IS KNOWN FOR RELIABILITY, THE BUSINESS ASKS FLASH TO SAVE THE DAY.**

Flash drives can be monitored for wear, so users know when it is nearing time for replacement. This avoids the catastrophic crash seen with disk drives, and wear leveling software in solid-state drives (SSDs) have made vast improvements. Today, SSDs now come with longer life expectancy than disk drives — about five to 10 years more — and that number is expected to continue to increase.

Not only do they fail in different ways, but they fail at different rates. One recent [study](#) on flash reliability found that the annual replacement rate (ARR) of flash drives was around 1 to 2%, while HDDs had an ARR of 4.6%.

# FLASH BECOMES A HERO!

In recent years, flash has grown in popularity, with many experts predicting an all-flash future. Capabilities continue to improve, and costs are falling, eliminating that barrier to entry that might have prevented SMBs from accessing this technology and enjoying its benefits.

The cost of flash dropped 80% from 2012 to 2017, and that's just the beginning of where companies can save money. While upfront purchase prices are still higher than HDD, flash's total cost of ownership (TCO) [typically makes it a better investment](#). And, when compared to HDD, flash can deliver comparable performance levels using fewer devices.

AREAS WHERE FLASH OFFSETS ITS PURCHASE PRICE INCLUDES OTHER LIFECYCLE COSTS, SUCH AS:

**PERFORMANCE**

**POWER USAGE**

**RELIABILITY**

**MAINTENANCE**

**FLASH SAVES ALL THE COMPANY'S DATA! SO MANY PEOPLE WANT FLASH THAT HE'S EXPECTED TO OUTSELL HDDS BY 2021.**

Numbers from [Statista](#) show a decline in shipments of HDDs worldwide from 2015 to 2021, while SSD shipments are climbing. Projected numbers for 2018 show about 370 million HDD units being shipped globally — a decline of 100 million units from 2015 — with 235 million SSD units projected to ship, more than double its 2015 numbers. By 2021, Statista shows, HDD shipments will only hit 330 million units, trailing SSD by some 30 million units.

# EVERYONE LOVES FLASH



**SOON, EVERY BUSINESS IS ASKING FOR FLASH.**

Flash has moved to the forefront as a storage solution for both desktops and laptops. The lack of moving parts means less wear for the drive during day-to-day usage, so it's good for even the most demanding work environments.

Since they are less prone to failure, users don't have to fear that dreaded crash that comes with hard disks. Both desktops and laptops are benefitting from flash, and workers reap the rewards of faster operating times and the ability to read and write data much faster than with a traditional HDD.

And, they have other benefits as well:



While it might not be able to leap from tall buildings, flash is more likely to survive a fall from a desk or table than HDD.

# THE HAPPY ENDING

**W**ith flash leading the way into the future, SMBs can provide rapid service and solutions needed to level the playing field and compete against larger companies. And, as flash continues to excel in the areas of capacity, cost, connectivity and performance, it creates an exciting and fast-moving future for Planet I.T.

Find out how Aventis Systems can help you find the flash solution that is right for your business. From servers and storage solutions to workstations, desktops and laptop computers, Aventis can help you build the solution that is right for you. Visit us online at [AventisSystems.com](http://AventisSystems.com) or call us at 1-855-AVENTIS to learn more.

