Inside Track Research Note

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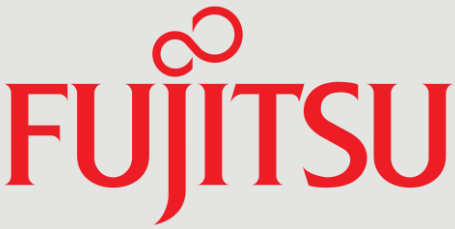

Modern Storage for Small and Mid-Sized Businesses

Advanced solutions deliver SMBs power and simplicity

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About this Inside Track

The insights presented in this document are derived from independent research conducted by Freeform Dynamics. Inputs into this include in-depth discussions with IT vendors and service providers on the latest technology developments, along with intelligence gathered from mainstream enterprises during broader market studies.

In a nutshell

If you work in a small or medium-sized business, storage is probably something you only think about when you need more capacity or have to implement a new application. However, a lot has changed in SMB storage in recent years. In particular, features that were aimed at large enterprises, with their deeper pockets, are now much more widely available. No one is suggesting you 'rip and replace', but when your next significant storage need arises, there are a lot more options and aspects to consider now.

Critical but chaotic

Storage is critical to your infrastructure, but it's probably been a while since you reviewed the data you hold and how it is distributed across your various storage systems. Indeed, many IT professionals in SMB environments never have the time to step back and take an overall view of their storage requirements and facilities.

A key factor here is that storage is too often procured and implemented in a piecemeal fashion. For example, it might come in directly attached to a server bought to support a new application, or as a system acquired simply to provide more general-purpose storage capacity. You might also find business teams making their own storage arrangements – sharing folders from their desktop machines, or signing up to cloud services to create group shares.

IT professionals in SMBs rarely have the time to stand back and take a broad view of their storage needs and systems.

Overlaid on this we have the habits of individual users. Whether it's the documents they accumulate on their C: drives, or the data they keep on USB sticks, smartphones, Dropbox and so on, it all adds up.

To make matters worse, storage arrangements tend to stick: no matter what the original intention was, they tend to become established parts of the landscape, left alone or even forgotten. Over time your data becomes more and more fragmented, with copies taken for ad hoc purposes, then copies made of copies and so on, to the point where you can't tell which one is the true original, the current version, or whatever. In short, storage tends to drift towards chaos if no one intervenes.

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If any of this sounds familiar, then read on. We'll be looking at some of the challenges arising from the trends we have mentioned, then moving on to explore what you can do about it, given the technology advances we have seen in recent years.

A recipe for risk

When storage grows, fragments and replicates in a relatively uncoordinated way, problems arise. One is obviously increased risk – both business risk and regulatory risk. If business-critical or sensitive data is spread around myriad devices and locations with little or no control or visibility, then both securing it and protecting it from loss or corruption are extremely difficult. You can educate users on the risks and ask them to be responsible, but even with the best will in the world it is hard to avoid exposures arising. And if you implement broad-ranging protection mechanisms, you bear the costs, hassles and overheads of that.

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Beyond risk and cost is the question of service levels. Systems that were originally just an operational convenience might since have become business-critical. If they are still running on the older, slower and less trustworthy storage they were originally built on, then users will no longer be getting the response times and availability that they

require. Conversely, non-critical systems may be sitting on modern, fast and resilient storage that they don't particularly benefit from, simply because prices had come down or someone offered you a good deal at the time of purchase.

Acquiring storage piecemeal will often create a mismatch between needs and capabilities.

It is all too likely, then, that this piecemeal approach to acquiring storage has left you with a mismatch between storage needs and storage capabilities, especially as requirements evolve over time. And with demands on storage both increasing and changing more rapidly than ever before, the challenge can only grow. Whether it's next generation collaboration systems, the increased use of multi-media, fatter document formats, or new workloads such as desktop virtualisation or digital ecommerce, it all translates to needing more capacity, performance and scalability, and more efficient and effective ways of protecting data and managing service levels. Are you prepared for this?

Upping your game

For the majority, selective cloud use makes sense, but on-premise storage will remain important.

One option is to migrate your storage into the cloud. Many service providers provide near-limitless storage that in theory allows you to consolidate much of your data. However, our research consistently tells us that most IT professionals do not consider this to be a serious option, except in very small or start-up environments. For the majority, selective cloud use makes sense, but on-premise storage will remain important for the foreseeable future. If that's your belief, you are in good company.

That said, you can learn some valuable lessons from how cloud service providers implement storage. For one thing, they clearly do a good job of pooling and sharing resources in a secure, optimised and automated way. Studies tell us that such capability is also appropriate when modernising on-prem systems, not least because it tackles many of the challenges that arise from fragmentation. The ideal is to provide dedicated capacity to each application, or even each individual user, but to manage things efficiently – hence the automation – as a coherent whole behind the scenes.

Storing and managing data sets centrally, where possible, is generally acknowledged to be good practice.

In practice, it may not make sense to centralise everything. For example, some applications may still need dedicated storage devices, and many users will still need to synchronise data to personal equipment for mobile use. However, a policy of storing and managing data sets centrally, unless there is a good reason to do otherwise, is generally acknowledged by storage professionals to be good practice.

But what are the practicalities of doing this? In particular, how do you cater for variations in performance and other service level requirements? Surely if you take the 'pool and share' approach, you either expensively over-deliver or you force the lowest common denominator of service onto everyone? At first sight it seems that you might create as many problems as you solve.

Technology advances can help here, as many modern storage solutions are designed to provide the advantages of pooling and sharing without the downsides.

Mainstream-friendly advanced solutions

Large enterprises have long had access to technologies that allow data protection to be optimised and automated.

Large enterprises have long had access to advanced technologies that allow various aspects of storage and data protection to be optimised and automated. These solutions have enabled progressive corporate IT teams to minimise overheads, reduce risks, manage quality of service effectively, and gear themselves up for new and changing demands. However, the cost and complexity of these advanced solutions has

historically put them beyond the reach of most small and mid-sized businesses. But not anymore.

In recent years, much of what we saw as large enterprise-class functionality has moved into the mainstream. Software tools have been repackaged at the right price points, processors have become more powerful, and self-contained appliances that combine software and standard hardware are now available to meet a variety of storage needs. These appliances deliver advanced capabilities but do not require huge amounts of resource or specialist skills to implement and run. This is often achieved by embedding automation capability into devices to enable continuous self-management and self-optimisation.

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A big advantage here is the falling cost and growing capability of enterprise flash storage. While an all-flash array might not be necessary or appropriate for an SMB, a hybrid array with a flash tier can provide significant advantages at little or no extra cost. As well as improved read/write performance, flash's lower latency makes it much more practical to build in self-tuning capabilities and capacity-saving inline data reduction techniques.

A flash tier can provide significant advantages at little or no extra cost.

It is beyond the scope of this document to mention all the options available on the market today, but we have provided details in Appendix A of some of the more important features and functions to look out for.

The role of suppliers

If any of what we have described has sparked your interest, then you can take things further by exploring manufacturer websites and other resources. There's no shortage of white papers and best practice guides available to help you get up to speed.

Beware though that while modern storage solutions can be very clever, they may also introduce dependencies elsewhere in your IT landscape. A very simple example is your network infrastructure, especially if you are looking to centralise storage for easier security, protection and management. It's no good having a modern storage system that continually optimises access speeds if it simply shifts the bottleneck to the network. Other considerations include whether and how to reuse existing equipment alongside new storage systems. Virtualisation options exist, for example, that can allow the new and the old to work together seamlessly.

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Against this background, we would generally advise working with an appropriate supplier, e.g. an IT reseller with good storage expertise and the right manufacturer relationships. We have provided more guidance on this in Appendix B.

The bottom line

The criticality of effective storage and information management to your business will only increase with time. Against the backdrop of continued data growth, new and changing requirements, and ever-escalating user and business expectations, only you can decide how well you are geared up for the future. If you do conclude that work is required, the good news is that modern storage solutions are now much more accessible and cost-effective for small and mid-sized organisations. With advice and support from the right suppliers, the latest storage technologies can totally transform the way you work, delivering benefits for both IT teams and those within the business.

Storage is growing ever more critical to business operations, making a thorough review essential.

Appendix A: Technology options to consider

Here are some of the things to look out for when evaluating solutions:

- Flexibility to incorporate flash technology, use drives of different formats (2.5", 3.5"), and include back-end cloud storage connectivity. All of this to be mixed and matched to meet your needs for capacity, performance and cost, and to be reconfigurable as your needs change in the future. Related to this, modern systems should allow you to expand capacity over time to meet growth, rather than having to buy excess capacity upfront to provide the necessary headroom. Capacity upgrades should not require system downtime.
- Flexibility from a network connectivity perspective, including support for iSCSI and Fibre Channel. The ability to add (or remove) connectivity during the lifetime of the storage adds another element of investment protection.
- Ability to define multiple tiers of storage, for example a performance tier based on flash technology, a second tier using spinning disks, and a third tier made up of commodity-class disks, tape or cloud storage. The right solution should automatically distribute and redistribute data across tiers, based on access patterns and simple business-level policies. The aim is to provide every application with the quality of service (QoS) it needs, while minimising ongoing administration and management.
- Advanced data protection, including continuous replication and snapshots to enable rapid disaster recovery, coupled with high availability (HA) capabilities where appropriate. These capabilities have been available for a long time, but have traditionally been complex to implement and operate. So you need to look for ease of initial configuration and subsequent administration, so you can apply the right kind of protection broadly across your application estate.
- Key functionality baked into the base platform. Capabilities such as de-duplication and compression to reduce physical storage and backup volumes, encryption for security, QoS controls, and modern alternatives to RAID to minimise troublesome and risky disk rebuild times, are all core now and should come as standard.
- Ability to work alongside your existing equipment and systems, e.g. out of the box integration with the storage management built into the likes of VMware vSphere and Microsoft Hyper-V. This will reduce ongoing operational complexity in virtualised environments. Even if your immediate needs are limited, it is still worth ensuring that the relevant interfaces and plug-ins are available for future proofing.
- Decent management tools that are either bundled or available on appropriate commercial terms, e.g. licensing options based on capacity or as a single system price, depending on your business needs and budget/accounting preferences. When evaluating proposals from suppliers, make sure all the functionality you need is included in the quote you receive, along with the cost for maintenance over a likely lifespan of four to five years.

If your requirements go beyond core storage, ask suppliers about the many forms of pre-integrated appliances now available. These can speed deployment, reduce integration costs and have the advantage of being supported as a single solution.

Appendix B: Supplier considerations

When investing in storage solutions, you may have certain brands in mind. If this is the case, make sure the manufacturer concerned has sales and support partners in your locality who sell to organisations of your size and understand the requirements of your type of business. You ideally want to work with a reseller or integrator who can help you review your current position, define sensible objectives, select the right solutions, and then provide appropriate post-sales services. With this in mind, here are some specific questions to ask when evaluating a supplier:

- Does the supplier offer a complete range of storage solutions, including traditional storage arrays, all-flash arrays, hybrid systems, backup appliances, tape libraries, etc? The wider the solution portfolio, the easier it is to fit solutions to your business requirements, and the less risk there is of being offered an inappropriate solution because that's all the supplier has available.
- Does the supplier's expertise extend beyond core storage? Depending on your needs and your own level of experience, you may be looking just for the ability to help you assess the impact of a new system on the rest of your infrastructure. Where related infrastructure work or investment is required, however, you may look to the supplier to provide server and networking solutions alongside the storage system. Beware of those who are vague about system dependencies, or who are not willing to discuss them at all.
- Is the supplier capable of delivering managed service and hosting options? Things to look out for here that you may find useful include routine monitoring and administration services, and off-site data replication, backup and disaster recovery services. Even if you have historically managed everything in-house, it is worth exploring the services on offer as a way of reducing the burden on your internal IT team.
- Does the partner provide effective post-sales support, possibly up to 24x7 for critical systems? It's important to understand the options here, including service level parameters such as response and resolution times. When in doubt, seek references from other customers.
- Does the supplier, or the manufacturer(s) it is representing, offer financing options to help you acquire storage as and when you need it, rather than having to pay for a system with excessive free capacity at day one?
- Does the supplier offer cost effective warranty, maintenance and support for the expected lifetime of the storage, which may now run to five, six or seven years?

If the existing companies you work with struggle to hold a conversation much beyond the price per Terabyte and the cost of maintenance, then you should look elsewhere. You really need a partner who understands the latest options available and can advise you on how you might exploit them in the context of your business.

About Freeform Dynamics

Freeform Dynamics is an IT industry analyst firm. Through our research and insights, we aim to help busy IT and business professionals get up to speed on the latest technology developments, and make better informed investment decisions.

For more information, and access to our library of free research, please visit www.freeformdynamics.com.

About Fujitsu

Fujitsu is the leading Japanese information and communication technology (ICT) company offering a full range of technology products, solutions and services. Approximately 156,000 Fujitsu people support customers in more than 100 countries. We use our experience and the power of ICT to shape the future of society with our customers.

Business-centric storage for midsize companies

Fujitsu offers a broad storage portfolio for small and mid-sized customers under the ETERNUS brand. These products are based on more than 50 years of experience in IT business and they include enterprise functionalities already in the entry-level. Many flexible configuration and upgrade option, simple licensing schemes and a broad network of local resellers are contributing to the increasing success of ETERNUS. By offering complete and simple infrastructure solutions consisting of storage, servers and network components, Fujitsu can offer SMBs attractive IT solutions.

For more information see: http://www.fujitsu.com/fts/microsites/smb-channel/

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