



Inside Track Research Note

In association with



Modern Storage Options for Small and Mid-Sized Businesses

Advanced solutions deliver
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.

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In a nutshell

If you work in a small or medium-sized business environment, storage is probably something you only think about when you need more capacity or have to implement a new application. However, solutions in this space that were previously only enjoyed by large enterprises are now a lot more accessible to those with limited budgets and resources. No one is suggesting a 'rip and replace' exercise, but when that next significant storage need arises, it is worth standing back to consider your options.

Critical but rarely coherently managed

Storage is a critical part of your infrastructure. If you're anything like many of your peers in other organisations, however, the chances are that it's been a while since you reviewed the data you hold and how it is distributed across various devices. Indeed many IT professionals in a small or mid-sized business environment have never had the time to stand back and consider their storage requirements and facilities in an overall manner at all.

One of the contributing factors here is the way in which storage is often procured and implemented on a piecemeal basis. It might enter the business directly attached to a server procured to support a new application, or in the form of a NAS device acquired to simply provide more capacity for general-purpose use. It is also not uncommon to see business teams making their own storage arrangements – sharing folders from their desktop machines or signing up to cloud services to create group shares.

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 have spread across USB sticks, Dropbox, etc, or their various personal devices, it all adds up.

Once in place, no matter what the original intention, storage arrangements tend to become a permanent part of the landscape - left alone, and even forgotten. Over time your data becomes more and more fragmented, with copies being taken for ad hoc purposes, then copies made of copies, and so on, to the point where no one really knows which document or data set is the true original, current version, or whatever. In short, storage tends to drift towards chaos if no one intervenes.

If any of this sounds familiar in relation to even a portion of the data that's important to your business, 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.

Why should anyone care?

A number of issues arise from the organic way in which storage grows, fragments and replicates in a relatively uncoordinated manner. One of the obvious problems is increased risk. If business critical or sensitive data is propagated around myriad devices and locations with little or no control or visibility then both securing it and protecting it from loss or corruption is extremely difficult. You can educate users on the risks and ask them to be restrained and responsible, but with the best will in the world, it is hard to avoid exposures arising. And from a protection perspective, if you did implement broad-ranging mechanisms, you could easily end up bearing the cost, hassle and overhead of storing and backing up the same data over and over again.

With the piecemeal approach to storage acquisition, it's therefore all too easy to end up with a mismatch between storage needs and capabilities, especially as requirements evolve over time.

The majority say that selective use of the cloud for some requirements might make sense, but that on-premise storage will remain important for the foreseeable future.

Adopting 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 a good idea.

Many modern storage solutions are designed to provide the advantages of pooling and sharing without the downsides.

Beyond risk and cost, there is then the question of service levels. Systems that may have represented an operational convenience when first put into place might since have become business critical. If they are still running on the old, slow and error-prone storage devices they were built on originally, then users may not be getting the service levels they require in terms of response times and availability. Meanwhile, non-critical systems deployed in the interim may be sitting on modern, fast and more resilient storage even if they don't particularly benefit from it, simply because prices had come down or someone offered you a good deal at the time of purchase.

With the piecemeal approach to storage acquisition, it's therefore all too easy to end up with a mismatch between storage needs and capabilities, especially as requirements evolve over time. And with demands on storage both increasing and changing more rapidly today than at any other point in history, things are only going to get more challenging. Whether it's next generation collaboration systems, increased use of multi-media data types, bigger documents with every new release of office tools, or new workloads like desktop virtualisation or digital ecommerce, it all translates to a need for more capacity, performance and scalability, and more efficient and effective ways of protecting data and managing service levels. Better to be prepared for this.

Upping your game

Some argue that the answer to many of the problems we have been discussing is to simply migrate all of your storage into the cloud. Many service providers provide near limitless storage that would in theory allow you to centralise a lot of your data in one place. Our research consistently tells us, though, that most IT professionals do not consider this to be a serious option unless they are working in a very small or start-up environment. The majority say that selective use of the cloud for some requirements might make sense, but that on-premise storage will remain important for the foreseeable future. If that's your belief, you are therefore in good company.

Having said this, there are some lessons to be learned from the way cloud service providers implement storage. For one thing, they clearly do a good job of pooling and sharing resources in a secure and optimised way. Studies tell us that such capability is also appropriate when modernising on-premise systems. Done in the right way, this approach tackles many of the challenges that arise from fragmentation. The idea is to provide each application, even each individual user, with their own dedicated capacity, but to manage things efficiently and coherently overall behind the scenes.

In practice, it may clearly not make sense to centralise everything – e.g. some applications may still need dedicated storage devices, and many users will still need to synchronise data to personal equipment for mobile use. However, adopting 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 a good idea.

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 end up with either an expensive over-delivery problem or forcing the lowest common denominator of service onto everyone. At first sight it might seem that you will 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.

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Mainstream-friendly advanced solutions

Large enterprises have for many years enjoyed access to advanced technologies that allow many aspects of storage and data protection to be optimised and automated. Through the use of such solutions, more progressive corporate IT teams have been able 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 the advanced solutions concerned have historically put them beyond the reach of most small and mid-sized businesses. But not anymore.

Over the past few years, the majority of what we might consider to be large enterprise class functionality has been incorporated into mainstream-friendly options. Software tools have been repackaged at the right price points, and appliances that combine software and standard hardware into self-contained boxes are now available to meet a variety of storage needs. Such offerings 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.

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

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.

But beware that while modern storage solutions can be very clever, they might have certain dependencies on other elements of 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 in place continually optimising access speeds if you just shift the bottleneck to the network. Other considerations include whether and how to reuse existing equipment alongside any new storage system. Virtualisation options exist, for example, that can allow the new and the old to work together seamlessly.

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 is only going to increase over 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.

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 hard disks of different formats (2.5", 3.5"), and include modern tape options, mixed and matched to meet your requirements for capacity, performance and cost. Such flexibility also means that systems can be reconfigured with different components should your needs change down the line. Related to this, modern systems should allow you to expand capacity over time to accommodate growth, rather than having to buy an excessive amount of capacity upfront to provide necessary headroom. Upgrades to capacity should ideally not require system down time.
- Flexibility from a network connectivity perspective, including support for iSCSI and Fibre channel options. The ability to modify the connectivity during the lifetime of the storage adds another element of investment protection.
- Ability to define multiple tiers of storage, including a very high performance storage tier based on flash technology, a second tier utilising fast spinning disks, and a third tier made up of slower, more commodity-class disks. With the right solution, data should be automatically and continuously/frequently distributed and redistributed across tiers based on access patterns and simple business level policies. The aim is to provide every application with the quality of service it needs, while keeping ongoing administration and management to a minimum.
- Advanced data protection capabilities, including continuous replication and snapshotting facilities to enable rapid disaster-recovery in the event of a failure, coupled with high availability (HA) capability where appropriate. Such facilities have been available on the market for a long time, but have traditionally been complex to implement and operate. What you are looking out for here, is therefore 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, or modern alternatives to RAID to minimise troublesome and risky disk rebuild times, should nowadays be regarded as core capability. These should come as standard.
- Ability to work alongside existing equipment and systems you have in place already, e.g. out of the box integration of storage management with virtual server solutions such as those provided by VMware ESX and Microsoft Hyper-V to reduce ongoing operational complexity in virtualised environments. Even if your immediate needs are limited, it is still worth making sure that relevant interfaces and plug-ins are available to increase the level of future proofing.
- Appropriate management tools either bundled or made available via appropriate commercial terms, e.g. software 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 of the functionality you need is included in the quote you receive.

If your requirements go beyond core storage, ask suppliers about the many forms of pre-integrated 'appliances' now available. These can speed deployment, lower 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 of solutions 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 for just an 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 24 x7 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 162,000 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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