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Answering the Data Challenge in the AEC Sector

**File-as-a-Service: Making stored
data easier to access globally**



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Introduction

By 2026, unstructured data in the AEC industry is expected to triple compared to 2023

Krishna Subramanian
ITPro Today

The Architecture, Engineering and Construction (AEC) industry is experiencing a data explosion. Trends like generative design, Building Information Modelling, use of drones, laser scanning surveys and augmented and virtual reality all offer organisations a fresh competitive edge, but bring rising demands on IT systems and management.

Unstructured data, which includes file shares (also known as SMB or CIF shares) and various project-related documents, is growing rapidly too.

Some of the reasons for increases in the volume of data generated include:



Increasingly Complex Models

Advanced BIM models and detailed CAD files are becoming standard in the delivery of projects.



More Detailed Project Information

Each project generates huge amounts of information, contributing to the overall data volume.



Larger File Sizes

The size of project files is continually increasing, further accelerating data growth.

80-90%
of all new enterprise data is unstructured.

Unstructured data is expanding 3x faster than structured data.

As the amount of data continues to grow, AEC companies face several critical issues:



Storage Overload

Cloud and server sprawl for increasing volumes of BIM models and CAD files.



Version Control

Local storage, data replication and inconsistent datasets across locations hamper backups and cause poor recovery times.



Collaboration Hurdles

Ensuring international teams work on the most up-to-date version of a file.



Data Security

Protecting sensitive project data from cyber threats and unauthorised access.



IT Strain

IT teams spending too much time on routine data management tasks instead of strategic projects.



Performance Lags

Latency causes user frustration as project files take too long to load, render and save.

Addressing these issues requires a new approach. The future of the AEC industry hinges on innovative data management solutions that can handle the increasing volume and complexity of data, while ensuring security, compliance and seamless collaboration. Let's take a look at how Creative ITC's File-as-a-Service (FaaS) can help you tackle these challenges, streamline operations, and prepare for future growth.

Specific challenges in the AEC industry

Specialised applications, like Autodesk Revit and Bentley Systems, are essential for modern AEC projects but they also bring significant data management challenges. These tools generate large, complex files to which project teams need rapid access to facilitate real-time collaboration. Ensuring that team members across multiple locations can work together on these files without risking poor user performance, data corruption or version conflicts is critical.

However, these needs can also lead to teams using unsanctioned methods to share and store data, such as downloading files to local devices in an effort to avoid latency and boost user experience. The result is data silos, inconsistent datasets and increased security risks. Managing a global workforce becomes a significant challenge, particularly when maintaining seamless access to the latest data across different regions. Poor data management and collaboration practices can extend project cycles, causing delays and increasing costs.



IT Challenges

- Inability to store and protect all data
- Difficulty managing file access and permissions
- Slow file transfer speeds for critical data
- Inconsistent data sets, particularly between sites
- Conflicting file versions result in data loss
- Local storage, data replication and backups cause poor recovery times



Business Challenges

- Rapid data growth and duplication
- Difficulty sharing data across locations
- Maintaining and proving regulatory and privacy compliance
- Inefficient usage of server and storage resources, server sprawl
- User productivity limitations, hampering business growth
- Complex IT infrastructure consumes time and CapEx

Impact on productivity and collaboration

When your data management systems are inadequate, your team can find themselves wasting valuable time searching for the right files and dealing with version conflicts, which then hampers communication and can negatively impact decision-making and project timelines. The inability to access real-time data can delay your project milestones and overall completion times, in turn leading to higher project costs and affecting your bottom line.

As your data volumes and IT infrastructure expands, so do your responsibilities for backup, recovery, security and compliance.

Larger, more complex environments increase the problems of unauthorised access and data breaches.

Without proper access controls and visibility, sensitive data can be exposed to malicious activities. While regulatory standards require strict data management and security measures, poor visibility and control can lead to compliance breaches, putting your organisation at risk.



Operational Complexity

When your data is spread across multiple locations, tasks like backup, recovery and updates become much more challenging. As a result, your IT teams often find themselves spending more time on operational tasks, like managing access permissions and security, instead of focusing on strategic initiatives. Growing data volumes strain your budgets with increased need for server and cloud storage, diverting funds away from more critical activities and digital transformation projects.

Distributed Data

Data spread across multiple locations makes backup, recovery, and updates more challenging.

Resource Strain

IT teams often find themselves spending more time on operational tasks, like managing data access and security, rather than focusing on strategic initiatives.

Rising Costs

Increased hardware and software costs, along with growing data volumes, strain budgets and divert funds from more strategic activities.

So, when you have multiple projects being worked on by teams across different continents, how can everyone work together seamlessly without jeopardising security or breaking the budget?

The need for a modern solution

The demand for innovative data management solutions is only going to increase. Future advancements in technology, such as more sophisticated BIM models, AI-driven design tools, and enhanced virtual collaboration platforms, will generate even more data that needs to be efficiently managed and stored securely. By adopting a modern solution now, you're not only addressing your current challenges but also preparing for the inevitable changes and expansions in the industry.

Forward planning is crucial; while we can't predict every changing need or the emergence of new cutting-edge technology, investing in scalable, flexible solutions ensures you can adapt quickly and stay ahead of the curve. This proactive approach will allow your organisation to maintain a competitive edge, streamline operations, and foster innovation.

Centralising where your data is held will also help to eliminate silos and ensure your team has access to the latest files. By integrating advanced collaboration tools, you can support real-time interaction and version control, enhancing productivity and reducing errors.

To protect your sensitive project data, robust security measures are essential for safeguarding against cyber threats and ensuring compliance with data protection regulations. Adding scalable storage and data management solutions will help you efficiently manage your growing data volume without compromising performance.

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Adopting scalable storage and data management solutions can help control the growing volume of data without compromising performance.

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Larger, more complex environments increase the risk of unauthorised access and data breaches.

How FaaS can help – store once, access anywhere

Creative ITC's FaaS, powered by Panzura, tackles data access challenges head-on. FaaS provides a comprehensive way to manage, access, and share your data and files. Unlike traditional storage solutions, our FaaS is the only real-time solution that integrates seamlessly with your existing AEC applications and workflows, creating a global file system that ensures data consistency across all sites. This boosts productivity and creates a more connected work environment, no matter where your team is located.

FaaS uses advanced technologies like intelligent caching and distributed file locking to enhance performance and productivity. Intelligent caching makes sure that your frequently accessed files are locally stored for quick access, which reduces latency and improves user experience. Meanwhile, distributed file locking prevents conflicts by allowing only one user to edit a file at a time, making your data integrity secure, and avoiding version control issues.

Our managed FaaS solution meets even the most exacting requirements for data availability, usability, security and compliance at scale. It brings all your data into one central place, cutting down your data footprint through de-duplication and compression. It offers robust security with military-grade encryption secure erase, and other important security features.

It also provides immutable data protection allowing quick recovery from any data loss or corruption. FaaS makes data impervious to ransomware and other damage by storing it in an immutable form, and further protecting it with read-only snapshots. These snapshots provide the granular point-in-time ability to recover individual files, folders or even the entire file system in minutes, without losing data. Ever. Therefore, an attack doesn't result in any significant downtime or loss of productivity.

Managing a global file system isn't a simple task. While Panzura's system offers the necessary technology, keeping everything running smoothly over the long term requires a dedicated team. That's where Creative ITC comes in. Our managed service takes the complexity out of your hands, ensuring everything operates like clockwork.

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I no longer have to worry about backup and restoration. The data is all there. I can pull my backup and restore files whenever needed.

Creative ITC's managed FaaS solution simplifies your IT operations by removing the need for extensive on-site data management, letting your IT teams focus on strategic projects. We're one of the few partners in Europe with the expertise to support Panzura technology, so your data management is in expert hands. Our team handles everything from deployment to ongoing maintenance, ensuring a smooth and efficient service. Creative ITC's managed FaaS solution not only streamlines your IT operations but also offers unparalleled support and expertise around the clock.

Our experts ensure smooth operation and maintenance of the entire setup, providing a stress-free experience for your organisation. This means less overwhelm for your IT staff and more time for them to work on projects that drive your business forward.


FaaS scales with your growing data needs, cutting costs and providing a private cloud solution with enhanced security and performance. This means you avoid the complexities and risks of public cloud services, ensuring your data is always protected and easily accessible.

With FaaS, you're not just tackling your current data management and protection issues but also setting up your organisation for future growth.



Why is Creative ITC the ideal choice for AEC companies?

When it comes to understanding the unique challenges of AEC companies, you couldn't be in better hands. We've been designing, delivering and optimising game-changing technology solutions with the industry for 20 years, and our teams have vast experience working in the sector. That's why many of the world's leading AEC companies choose Creative ITC.

		Foster + Partners	SHEPPARD ROBSON	ALLFORD HALL MONAGHAN MORRIS	aukett swanke
RSHP	BENOY	WilkinsonEyre	DCA	ferris+ sloane	
	AHR	POPULOUS	EPR ARCHITECTS	Feilden Clegg Bradley Studios	Thornton Tomasetti
BroadwayMalyan^{BM}	AECOM	ARUP	CSDENGINEERS+ <small>INGENIUS BY NATURE</small>	Allies and Morrison	SGP <small>Architects • Masterplanners</small>

Our motto is 'good is never done'. We have consistently grown and invested in our technical support team. We recruit the best engineering talent and continually push them to advance their technical certifications to achieve the highest qualifications in their field. We maintain the highest certifications with all our partners, who include many of the world's leading technology providers - from established global giants through to emerging innovators. Plus, we also conform to numerous quality standards, including ISO 9001, 14001 and IEC 27001 for Information Security management.

With legacy systems and business apps increasingly moving to the cloud, the Creative ITC range of managed solutions provides the perfect cloud-based, ITIL-ready solution,

underpinned by detailed processes and the latest IT management best practices. That end-to-end experience ensures that our engineers have the deepest understanding of everything from virtualisation to cybersecurity and network issues.

By choosing Creative ITC, you're not simply putting a bandage over your IT issues and hoping symptoms won't return. You're investing in a team of skilled professionals who can provide a cure. We'll meet regularly with all stakeholders to make sure we maintain the very highest service standards, meet and exceed your expectations. Simply put, our success is built on delivering outstanding customer experiences. And we never, ever forget that.

Benefits of FaaS for the AEC Industry

The benefits of FaaS for the AEC industry are substantial. By providing a centralised, secure, and scalable data management solution, FaaS enhances productivity and collaboration, reduces operational complexity, and lowers costs. This allows you to focus on your core competencies and deliver projects more efficiently and effectively.

Key features of FaaS include:



Global Accessibility

Your team can access and collaborate on files from any location, regardless of where they are in the world. This feature is ideal for bringing teams together across different countries or large regions, like the USA and Canada. Additionally, data can be mirrored to give more robust business protection ensuring resilience and continuity.



Built-In Advanced Collaboration Tools

FaaS offers low-latency real-time collaboration with local storage performance, allowing your team to work as if they were in the same office, no matter where they are. This is achieved through intelligent caching and distributed file locking, which ensures that frequently accessed files are quickly available, and only one user can edit a file at a time to prevent conflicts.



Enhanced Security

With robust security measures, FaaS minimises the risk of data loss or leaks. Files are encrypted with military-grade security, and immutable snapshots protect against ransomware, allowing you to revert to previous versions of your data if needed.



Effective Recovery

Our technology ensures data protection and rapid recovery in case of cyber incidents. The system's built-in snapshots capture data at various points in time, enabling you to restore your files quickly and efficiently without significant downtime.



Simplified IT Operations

FaaS eliminates the need for extensive on-site data management by offering a hybrid approach that leverages both on-site and cloud resources. This setup frees up your IT teams to focus on more strategic initiative while we handle the complexities of data management. As one of the few partners in Europe with the expertise to support Panzura, Creative ITC provides comprehensive managed services, ensuring your data infrastructure runs smoothly and efficiently.

FaaS enables seamless collaboration across continents, supporting the growing need for flexible work environments in the AEC industry. By future-proofing your organisation with innovative data management solutions, you can adapt to industry changes and maintain a competitive edge.

Boost collaboration with VDIPOD and FaaS



By integrating Creative ITC's VDIPOD solution with FaaS, you'll be able to significantly enhance collaboration and efficiency across remote regions. The combination of these services provides a unified platform for high performance application access, and sharing data, making it easier for your teams to work together regardless of their location.

Purpose-built and proven in the AEC industry, VDIPOD delivers unmatched real-time collaboration for global teams of architects, designers, and engineers.

Imagine you have local file stores that your users need to access. When expanding to new environments, such as opening a presence in Mumbai or Canada, instead of setting up a physical site for those users, you can utilise our multi region cloud VDIPOD solution.

Users can connect centrally while collaborating effortlessly with the wider organisation.

Key features of FaaS include:

Centralised Access

Users from different locations can access files and applications from a single central point, ensuring faster and more reliable access. This centralisation eliminates the need for multiple local storage systems, simplifying your IT infrastructure.

Enhanced Collaboration

The combination of VDI and FaaS facilitates real-time collaboration on AEC-specific applications. Your teams can work together on complex projects without delays, improving project timelines and outcomes. This is particularly beneficial for handling large BIM datasets and graphics-intensive applications like AutoCAD and Revit.

Cost Efficiency

Instead of incurring the costs of setting up and managing multiple sites, you only pay a small hosting fee for the Panzura node alongside our VDIPOD solution. This reduces overhead and optimises your IT budget, making it a cost-effective choice for expanding your operations.

Scalable Solutions

As your organisation grows or consolidates regions, our integrated solution scales effortlessly to meet your needs. This flexibility is crucial for adapting to business expansions or changes in operational scope, ensuring that your IT infrastructure can grow with your business.

Integrating VDIPOD with FaaS not only reduces the number of components within your network but also streamlines overall management. This makes it an ideal solution for enhancing efficiency and collaboration across your organisation. The synergy between VDIPOD and FaaS ensures that your data management infrastructure is robust, scalable, and ready to support your growth.



Discover what you can achieve with Creative ITC

To learn more about how Creative ITC's managed
File-as-a-Service solution can transform your
data management and enhance your project delivery,
contact us today.

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