



# AEC Data Insights Report

KEY INDUSTRY INSIGHTS FROM EGNYTE'S 4,000+ AEC CUSTOMERS

February 2024



# Introduction

## THE SIGNIFICANCE OF DATA MANAGEMENT IN THE AEC INDUSTRY

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Firms within the Architecture, Engineering, Construction and owner segments stand at the forefront of shaping the built environment and are driven by digital transformation. In this dynamic landscape, efficient data management can have far-reaching impacts on project outcomes, even long after they have been completed when it is not given proper attention.

## IMPORTANCE OF EFFICIENT DATA MANAGEMENT

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Efficient data management is imperative in the AEC industry, where managing intricate models, project drawings, simulations, and collaborative projects with dozens of stakeholders is the norm. Egnyte analyzed 4,000 AEC customers and the results revealed a transformative shift marked by an unprecedented surge in data storage demand. The report emphasizes the role of efficient data management in empowering professionals to leverage massive datasets for informed decision-making, sophisticated design creation, and collaborative efforts. This trend addresses the challenges involved in meeting escalating AEC data storage needs and plays a crucial role in bolstering data security against cyber threats.

## NAVIGATING DATA SECURITY CHALLENGES

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The AEC industry's vulnerability to cyberattacks, highlighted by the Dodge Construction Network's SmartMarket Brief titled *Data Resilience in Design and Construction: How Digital Discipline Builds Stronger Firms* underscores the importance of using robust data management practices as the frontline defense against emerging threats. The report contains the details and results of an analysis of the nuances of data governance protocols, cybersecurity issues, and technological advancements. From targeted cybersecurity measures to enhanced governance practices, implementing efficient data management practices can safeguard sensitive information and foster a resilient and secure operational environment.

## PURPOSE OF THE REPORT

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This comprehensive report is a guide for AEC professionals who are navigating the dynamic landscape of governance, cybersecurity, and technological advancement. Leveraging Egnyte's in-depth analysis of its AEC customer base, the report aims to provide valuable insights into transformative trends shaping the industry. The primary purpose is to equip professionals with the knowledge needed to make informed decisions in an era of unprecedented change.

This report includes actionable recommendations tailored to different facets of AEC operations. Each section serves a specific purpose, from exploring cloud storage adoption and securing AEC data to illuminating best practices for file sharing. Whether guidance on scalable storage solutions, strengthening security measures, or optimizing file-sharing practices, the overarching goal is to empower AEC firms with insights and strategies that are necessary for navigating the complexities of their data-driven environment. Because AEC undergoes continual transformation, this report can serve as a compass, directing professionals toward resilient and secure practices that foster excellence, adaptability, and continuous improvement.



# Executive Summary

## OVERVIEW OF EGNYTE'S AEC INSTALL BASE

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Egnyte has a significant presence in the AEC industry, serving a diverse and extensive client base. The company caters to various customers, and its global footprint is evident from its customers throughout North America and Europe, Middle East, and Africa (EMEA).

### Data Management Trends in the AEC Industry

From data storage growth to emerging security threats, our findings highlight the evolving needs of AEC firms. These insights serve as a guide for decision-makers navigating the complexities of data management.

#### 1. Data Storage Growth

- ▶ AEC customers' data storage requirements have significantly grown from an average of 3.34 TB in 2018 to 25.64 TB in 2023, with a compound annual growth rate of 50.32%.
- ▶ This impressive increase highlights the fact that there is strong demand for additional storage capacity, surpassing industry growth.
- ▶ Cloud storage adoption underwent significant growth across segments, with notable increases in the AEC and owner segments, reflecting a paradigm shift in data management practices.
- ▶ The surge is propelled by advanced technologies, data-intensive processes, compliance needs, and the shift toward cloud-based collaboration, highlighting the pivotal role of storage infrastructure in accommodating the industry's evolving data landscape.

## 2. Securing AEC Data

- ▶ With the growth of cloud storage adoption, the AEC segments face cybersecurity challenges, with significant vulnerability highlighted by Dodge Construction Network's SmartMarket Brief titled ***Data Resilience in Design and Construction: How Digital Discipline Builds Stronger Firms.*** AEC firms have varying governance practices, with the architecture segment of the AEC industry exhibiting high efficiency.
- ▶ The construction segment faces 455,219 high-severity occurrences, emphasizing the need for additional cybersecurity protection.
- ▶ Two-factor authentication (TFA) adoption is positive across all segments (67% to 75% AEC customers use TFA).

## 3. File-sharing and Collaboration in AEC

- ▶ AEC firms leverage integrations for efficient file management, with varying segment preferences. On average, each segment maintains at least five active repositories.
- ▶ The AEC industry has higher engagement levels than other industries, with more domain and user counts, as well as larger volumes of distinct files and actions.
- ▶ Engineering users are the most active in file syncing, which is a distinctive characteristic of their usage patterns.
- ▶ Nearly half of architects and two-thirds of builders face challenges related to consistent, highly-available document access.

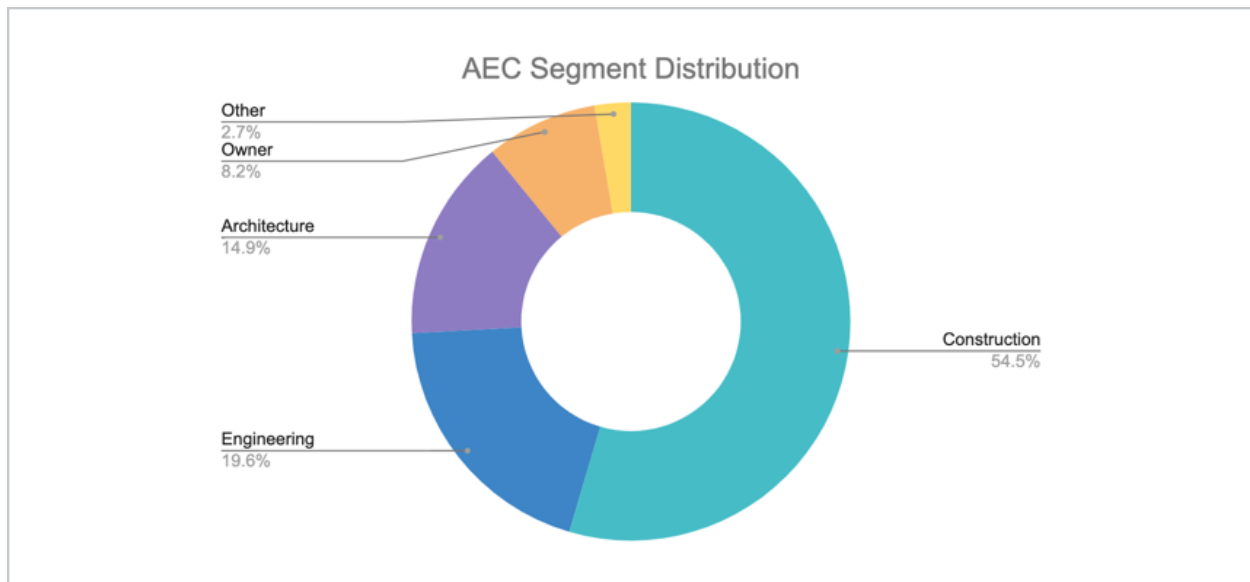
# About Egnyte's AEC Install Base

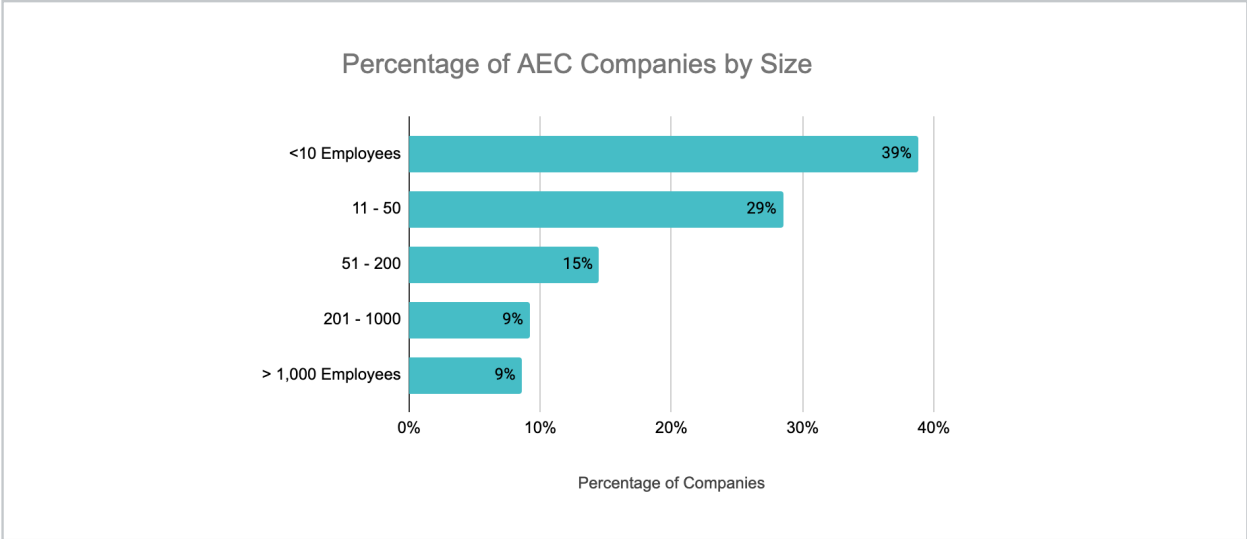
## OVERVIEW OF EGNYTE'S AEC CUSTOMERS

Egnyte's commitment to the AEC industry exemplifies its extensive and diverse customer base. A deeper analysis of Egnyte's customers provides context for understanding the broader industry.

## CUSTOMER BASE OVERVIEW

Egnyte's robust AEC customer base comprises more than 4,000 clients across industry segments. Notably, the construction segment takes the lead, encompassing 54.5% of Egnyte's AEC customers. The engineering segment follows with 19.6% of Egnyte's AEC customers, followed by the architecture segment, which accounts for 14.9% of Egnyte's AEC customers, and the owner segment with 8.2% of Egnyte's AEC customers.





### SEGMENT AND SIZE DYNAMICS

Analyzing Egnyte’s customer distribution across segments and company sizes grants insights into the distinct needs and preferences of AEC firms, guiding the development of solutions to match their unique requirements. Examining company size by segment accentuates the predominance of smaller enterprises in the AEC industry, with a gradual decline as the employee count increases. The architecture sector stands out with a high proportion of small companies while the engineering sector exhibits a greater presence of medium-sized enterprises. This distribution aligns with prevailing industry trends.

### GLOBAL REACH

Egnyte’s global footprint in the AEC industry significantly contributes to a nuanced understanding of regional trends and preferences. North America is the primary stronghold, housing 84.3% of Egnyte’s AEC clientele. Experiencing rapid expansion, the EMEA region currently constitutes 11.3% of Egnyte’s total AEC customer base, underscoring Egnyte’s capability to address diverse requirements on a global scale. Egnyte’s AEC customer landscape reflects its commitment to segment diversity and underscores its adaptability to the varied demands of companies across segments, sizes, and geographical locations. Egnyte’s strategic positioning makes it a key partner for businesses navigating the complexities of data management in the AEC industry.



# Data Management Trends in the AEC Industry

According to the Zweig Group's "2023 Information Technology Report of AEC Firms," there was a noticeable shift from local storage to cloud storage for project archives between 2019 and 2023. The report highlights that the median AEC utilization of shared online disk storage in the cloud has increased from 3 terabytes to 17 terabytes, which shows the industry's commitment to modernization. Egnyte, an enterprise file-sharing and content governance platform provider, confirmed that cloud storage solutions are becoming increasingly popular among its AEC customer base. This trend reflects the industry's growing need to manage complex models, project drawings, simulations, and collaborative projects, which, in turn, is leading to a remarkable surge in data storage. All the versions of each of these respective file types will accumulate over the lifetime of the project.

The report discusses the importance of securing AEC data, given the increasing data growth. It also highlights the emerging threats, governance practices, and cybersecurity challenges faced in the industry. According to a recent survey by Dodge Construction Network titled *Data Resilience in Design and Construction: How Digital Discipline Builds Stronger Firms*, 59% of firms reported experiencing a cybersecurity threat in the past two years. General contractors were the most impacted, with 70% experiencing a cybersecurity threat and 30% falling victim to a ransomware attack since 2021. The report emphasizes the need for AEC companies to approach data security proactively. Together, these trends illuminate the current trajectory of the AEC sector's data management landscape, offering valuable guidance for professionals navigating the complexities of technological advancements, governance, and cybersecurity.

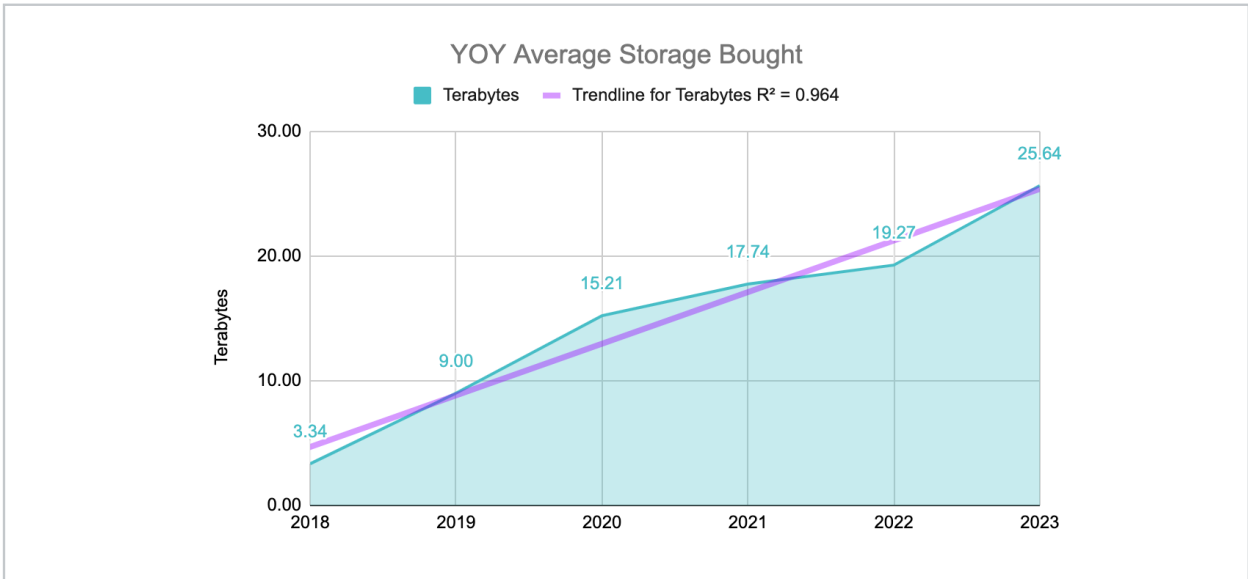


# CLOUD STORAGE ADOPTION: NAVIGATING UNPRECEDENTED GROWTH

## Understanding the Dynamics

The AEC industry is experiencing an increasing need for data management practices, prominently reflected in the striking growth observed in cloud storage adoption. This evolution is fueled by several factors, including the widespread adoption of advanced technologies, an increasing reliance on data-intensive processes such as building information modeling (BIM), and the escalating use of high-resolution media in project workflows.

## Unprecedented Growth in the AEC Industry



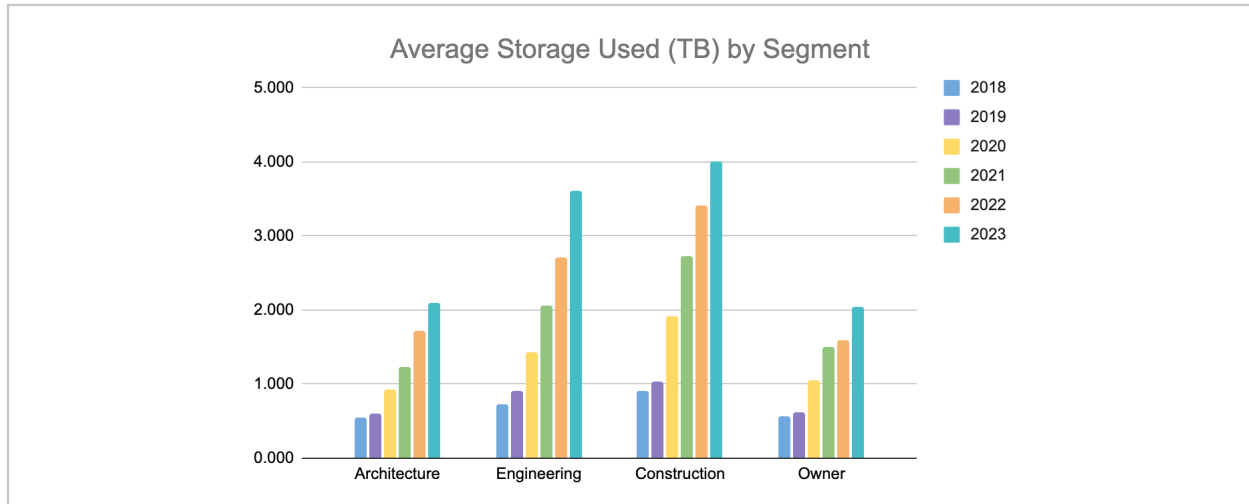
The data reveals a remarkable surge in cloud storage adoption among AEC customers, commencing at 3.34 TB in 2018 and culminating in an impressive 25.64 TB in 2023. This transformative trajectory underscores the industry’s burgeoning demand for increased storage capacities, which is driven by the imperative to manage large datasets, facilitate seamless collaboration, and adhere to evolving compliance and archival requirements.

## Factors Driving The Surge

The recent surge in cloud storage adoption can be attributed to a combination of factors, including:

- ▶ **Advanced Technologies:** The industry-wide adoption of advanced technologies, such as BIM and real-time collaboration tools, necessitates the use of robust cloud storage solutions to facilitate seamless data exchanges and collaboration.
- ▶ **Data-Intensive Processes:** The prevalence of data-intensive processes within the AEC industry, including high-resolution imaging and complex simulations, contributes to an expanding data footprint, driving the need for increased storage capacities.
- ▶ **Compliance and Archival Needs:** The imperative to store vast amounts of project-related data for compliance and archival purposes further amplifies the demand to increase storage capacities.
- ▶ **Cloud-Based Collaboration:** The shift toward cloud-based collaboration tools facilitates increased digital collaboration and data growth.

## Adoption By AEC Segment



### Architecture

The architecture segment exhibited a more than threefold increase in cloud storage adoption, soaring from 0.543 TB in 2018 to a substantial 2.100 TB in 2023. This surge indicates a fundamental shift in the nature and scale of architectural project files, with architects actively managing larger and increasingly intricate design files, high-resolution renderings, and intricate models.

### Engineering

The engineering segment experienced noteworthy growth in cloud storage adoption, witnessing a more than eightfold surge from 0.724 TB in 2018 to an impressive 3.604 TB in 2023. This growth aligns with the segment's development of sophisticated simulations, detailed engineering models, and complex data analytics.

### Construction

The construction segment displayed a particularly dramatic surge in cloud storage adoption, escalating from an average of 0.903 TB in 2018 to an impressive 4.001 TB in 2023. This substantial increase underscores the industry's increasing reliance on digital project management, BIM, and technology-driven processes, with construction professionals actively managing expansive datasets and collaborative project information.

### Owner

Even in the traditionally oversight-focused owner segment, there was a substantial increase in cloud storage adoption. Starting at 0.506TB in 2018, the average storage per firm bought rose to 2.051 TB in 2023. This growth signifies that owners are actively participating in data-driven decision-making processes, necessitating increased storage to manage project-related documentation, compliance data, and other critical information for building management.

## Future Projections

Looking ahead, the trajectory of data storage is expected to be influenced by several emerging factors. Firstly, the anticipated rise in litigation and liability will require firms to extend the retention period for construction documentation. Secondly, evolving business usage patterns, notably the repurposing of office buildings into mixed-use spaces, will demand intricate retrofitting, leading to the sustained need for detailed construction information. Thirdly, the increasing prevalence of video and reality-capturing content, which consumes significantly more data storage than simple drawings or photos, is poised to contribute to a substantial surge in storage requirements.

In the midst of these developments, the AEC industry continues to embrace technological advancement and engage in increasingly intricate projects. The trajectory of cloud storage adoption is poised for sustained growth, with future projections indicating continued demand for increasingly large storage capacities. This demand is driven by evolving project requirements, increasing data availability, and a persistent reliance on data-intensive workflows. As a result, the role of storage infrastructure remains pivotal in shaping the success of AEC endeavors, providing a scalable and efficient foundation for collaborative and data-driven project execution. Fueled by these technological advancements, the expanding storage needs will be seamlessly accommodated to ensure successful project outcomes.

# SECURING DATA: NAVIGATING THREATS AND PROPELLING EXCELLENCE

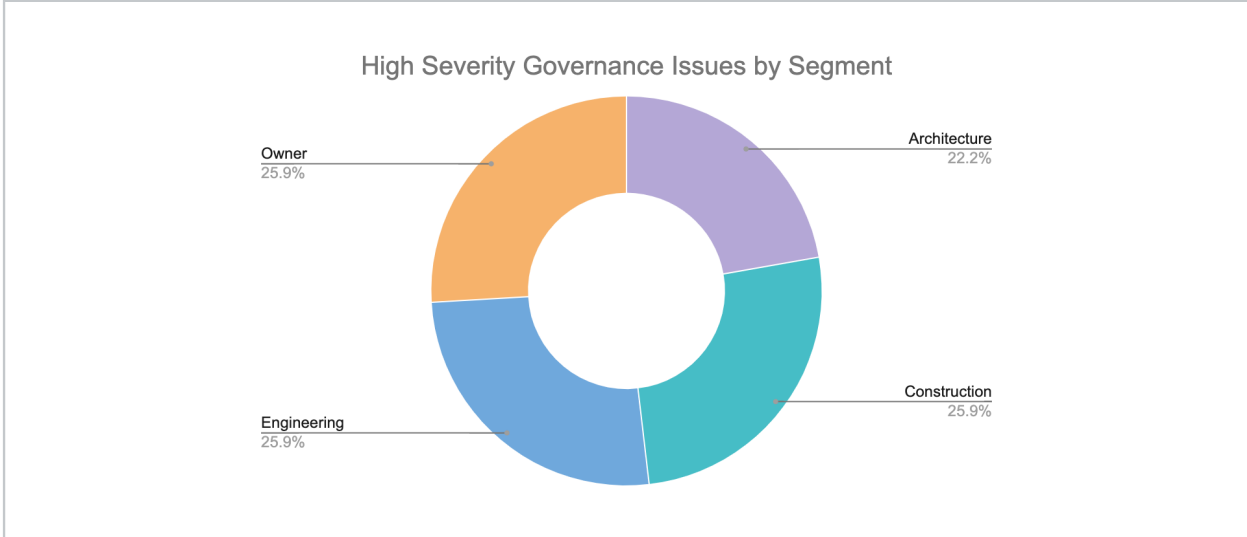
## Introduction

As AEC firms undergo a transformative shift toward modernization marked by an unprecedented surge in data storage demands, awareness of emerging threats is paramount to effectively navigate the regulatory landscape. An in-depth analysis can reveal essential information about governance practices, cybersecurity challenges, and technological adoption. The aforementioned *Data Resilience in Design and Construction: How Digital Discipline Builds Stronger Firms* report by the Dodge Construction Network highlights the industry’s vulnerability to cyberattacks. The report reveals that even though ransomware attacks last an average of 20 days, 77% of firms cannot survive for more than five days without access to documents, underscoring the critical need to improve preparedness.

This revelation stresses the industry’s heightened sensitivity compared to others, primarily because outages result in project delays that can be very costly. As firms work toward digital transformation, it becomes increasingly important to be prepared for cyber threats. Strong cybersecurity measures implemented within a secure data infrastructure are needed to protect sensitive data and ensure that projects can proceed without interruption. The following data points provide further insight from Egnyte’s AEC customers.

## Insights From Egnyte’s AEC Customer Findings

### Governance Practices



This data reveals the prevalence of high-severity governance issues within different segments based on the type and amount of sensitive content present. As a platform, Egnyte empowers customers to address newly identified issues within their content sources in real time.

### Architecture Segment Efficiency

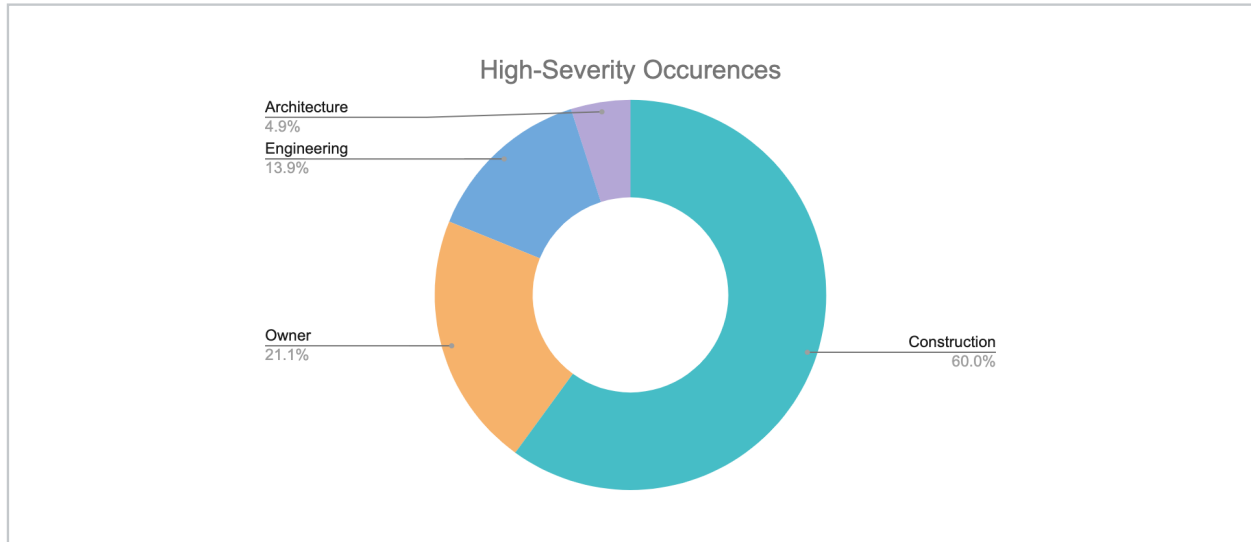
- ▶ **Data Point:** The architecture segment exhibits slightly higher efficiency when compared to the other segments, with only 22% high-severity governance issues.
- ▶ **Explanation:** This efficiency can be attributed to the likelihood that the architecture segment operates within a more regulated environment than the other segments. Architects often handle sensitive design plans, blueprints, and proprietary information, requiring strict adherence to governance protocols. This segment's low percentage of high-severity issues suggests a robust governance framework and strong adherence to industry regulations within it.

### Challenges in Construction, Engineering, and Owner Segments

- ▶ **Data Point:** The construction, engineering, and owner segments face 26% of the high-severity governance issues.
- ▶ **Explanation:** The high percentages of high-severity governance issues in these segments indicate that there is a need for improvement. The factors that contribute to this include a large volume and diversity of data types, complex project documentation, and potentially less stringent governance practices when compared to the architecture segment. The use of enhanced training programs or increased oversight is necessary to address high-severity governance issues. Training can raise employee awareness of the importance of data governance while increased oversight ensures that protocols are consistently followed across the diverse activities within these segments.

In summary, the high-severity governance data highlights variations in efficiency across AEC industry segments. The architecture segment's low percentage of high-severity issues suggests that a well-established governance framework is used within it, likely due to the regulated nature of architectural work. On the contrary, the construction, engineering, and owner segments exhibit high percentages when compared to the architecture segment, signaling a need for interventions such as improved training or heightened oversight to enhance governance practices and mitigate high-severity issues.

## High-Severity Occurrence<sup>1</sup>



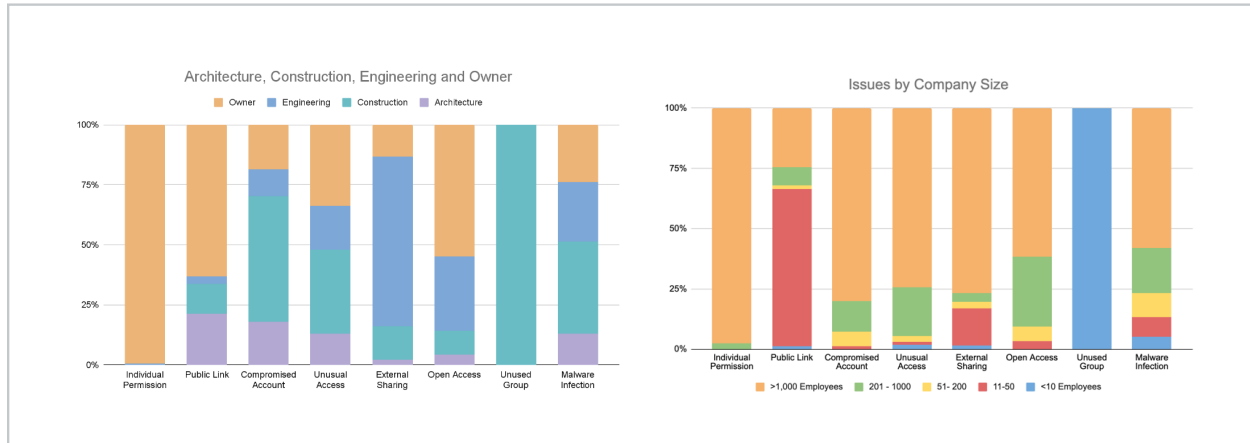
**Construction:** The construction segment stands out with the highest governance occurrences at 60%, raising a red flag about potential data management vulnerabilities. This significant proportion suggests that there is a need to use heightened preventive measures within this segment. The challenges faced in the construction sector may be attributed to the nature of its projects, which involve the use of complex data types, a high number of stakeholders, diverse documentation, and potentially less stringent governance protocols than the other segments. Urgent attention to bolstering preventive measures, possibly through enhanced training programs and increased oversight, is imperative to mitigating risks and strengthening overall governance.

**Owners and Engineering:** Conversely, the owners and engineering industry segments display lower occurrences at 21.1% and 13.9%, respectively, than the other segments. Although these figures are comparatively less alarming than those for the construction segment, they underscore the industry-wide need for continual improvement in governance practices. The owners segment, which is responsible for strategic decision-making, should consider targeted strategies to address the specific challenges. Likewise, professionals in the engineering segment may benefit from refining their governance practices to align with evolving industry standards.

**Architecture:** In stark contrast, the architecture segment boasts the least governance occurrences at 4.9%, demonstrating a commitment to incident prevention. This segment's performance suggests the implementation of robust governance frameworks, stringent protocols, and a proactive stance in addressing potential issues before they escalate.

<sup>1</sup>High-severity occurrences are recurring IT security issues that could have a significant impact and must be addressed quickly and effectively to avoid any harm to your company's productivity or technical infrastructure.

## Issue Types by Segment and Company Size



## Segment-Specific Issues

**Data Point:** High-severity occurrences are widespread among all segments.

- ▶ Individual permissions<sup>2</sup> challenges are widespread in the owner segment.
- ▶ Public link<sup>3</sup> issues commonly affect owners.
- ▶ Compromised accounts and unusual access<sup>4</sup> pose threats to the construction segment.
- ▶ External sharing<sup>5</sup> issues typically surface in the engineering segment.

**Conclusion:** Segment-specific issues highlight the nuanced nature of governance challenges. Tailoring strategies to address professional's concerns in individual segments is crucial to effective governance implementation.

## Company Size Impact

**Data Point:** Large organizations with more than 1,000 employees face concerns surrounding individual permissions, compromised accounts, and unusual access.

**Conclusion:** Individual permissions challenges are widespread across all company sizes, indicating that there is a need for the use of standardized practices. The impact on large organizations suggests that scalability and complexity amplify these concerns.

Occurrence distribution and segment-specific issues provide valuable insights into how to make targeted improvements, emphasizing the need for tailored training, oversight, and preventive measures to strengthen governance practices in the AEC industry. All data points were not generated from a survey but, rather, alerts that were detected and reported using Egnyte's machine learning tools, demonstrating Egnyte's commitment to data security.

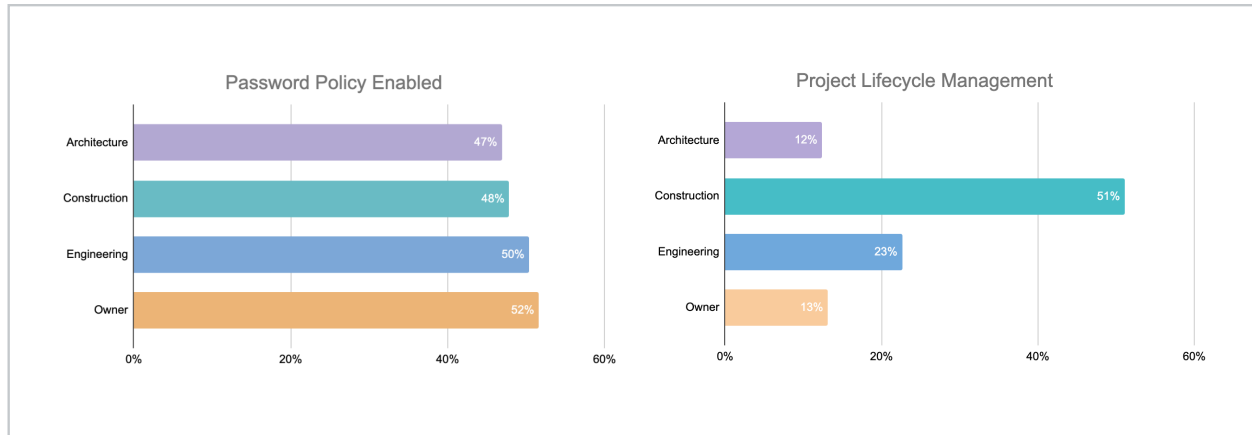
<sup>2</sup>Individual Permissions indicate that a folder has been shared with a specific individual rather than a group. Best practices recommend sharing folders with groups for better management.

<sup>3</sup>Public links pertain to folders or files that are accessible through a URL without requiring a password. The availability of an expiration date for the public link may vary.

<sup>4</sup>Unusual Access is flagged when a user's activity significantly deviates from this established pattern, considering seasonality.

<sup>5</sup>External sharing involves the act of sharing a folder with individuals categorized as Standard Users (Egnyte) or External Users within a specified content source.

## Security Measures Adoption



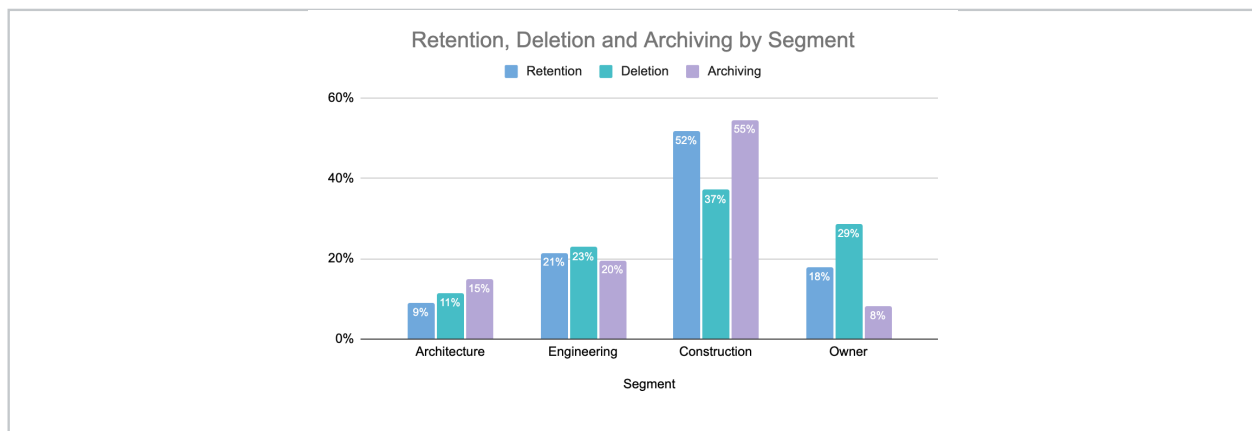
**Password Policies** typically involve several features, such as password length minimums, complexity requirements, restrictions on password reuse, lock-out parameters, and expiration rules.

**The adoption of password policies** is relatively consistent, ranging from 47% to 52%, indicating that users have a foundational understanding of the importance and that there is a lack of highly defined processes across small- and medium-sized businesses as a whole.

**Project lifecycle management** involves the use of tools to designate project folders and track their status from inception to retirement using standardized policies.

- ▶ Examining technology adoption, it was found that project lifecycle management features vary among different segments.
- ▶ The construction segment leads the way with 51% using project lifecycle management features while the owner segment has only 13%, the engineering segment has 23%, and the architecture segment has 12%.
- ▶ This indicates that there are diverse data management practices across different segments.

## Automated Retention, Deletion, and Archiving (RAD) Features





**Retention** policies are designed to protect the business while deletion and archival policies are designed to reduce costs for the businesses. All policy types are critical to improving users' daily productivity and reducing the likelihood of cyberattacks.

**The construction segment** leads at 52% of firms using automated deletion and archival policies, while the architecture segment lags at 9%, suggesting that there are potential opportunities for streamlining data management practices, specifically in segments with low RAD adoption percentages.

## Recommendations

- ▶ **Enhanced Governance Practices:** *Construction, Engineering, and Owner Segments:* Conduct a thorough review and invest in additional training, resources, or oversight measures.
- ▶ **Preventive Measures in Construction:** *Construction Industry:* Prioritize preventive measures, including enhanced training, resource allocation, and rigorous oversight.
- ▶ **Targeted Cybersecurity Measures:** *Industries Facing Specific Issues:* Implement targeted cybersecurity measures, including access control, encryption, and training.
- ▶ **Streamlining Data Management Practices:** *Segments with Low RAD Adoption:* Especially architecture, explore the benefits of automated data management for enhanced efficiency and compliance.
- ▶ **Continual Improvement:** Emphasize the importance of continual improvement in governance, cybersecurity, and technology adoption across all segments. The use of regular assessments and adaptive strategies fosters a resilient and secure operational environment within the AEC industry.

## Conclusion

The findings underscore the AEC industry's commitment to evolution, adaptability, and an unwavering pursuit of excellence. Managers must prioritize the harmonious integration of people, processes, and technology to optimize and safeguard business interests. These insights act as crucial guideposts in the navigation of the intricate landscapes of governance, cybersecurity, and technological advancements. They inform targeted strategies and inspire continuous improvement initiatives, fostering a resilient and secure AEC ecosystem. This holistic approach ensures that the industry remains at the forefront of innovation while fortifying its foundations for sustained success.

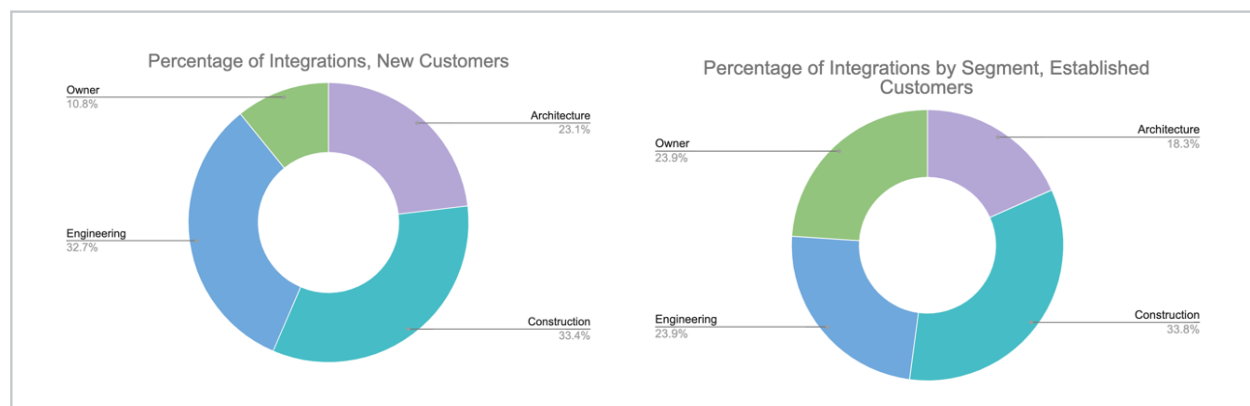
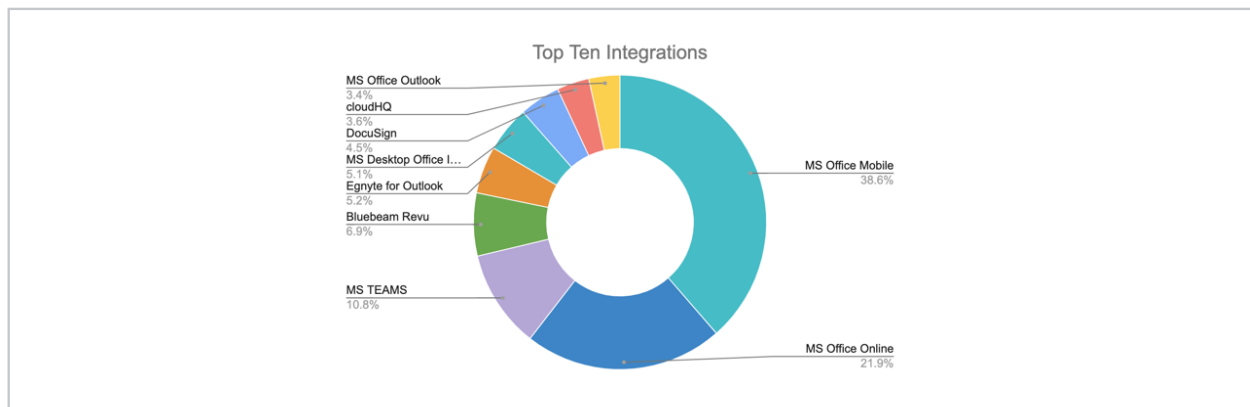
# File-Sharing and Collaboration Trends and Insights

Flexible, scalable data storage solutions are crucial in the AEC industry. This section covers the tools, integrations, and metrics that shape file-sharing and collaboration practices.

The SmartMarket Brief *Data Resilience in Design and Construction: How Digital Discipline Builds Stronger Firms* by Dodge Construction Network highlights significant challenges in document access for architects and contractors. According to the report, nearly half of architects and two-thirds of contractors face disruptions due to inefficient multiparty workflows and difficulties accessing documents on mobile devices. Our analysis identifies and examines these challenges and provides insights into how to address them.

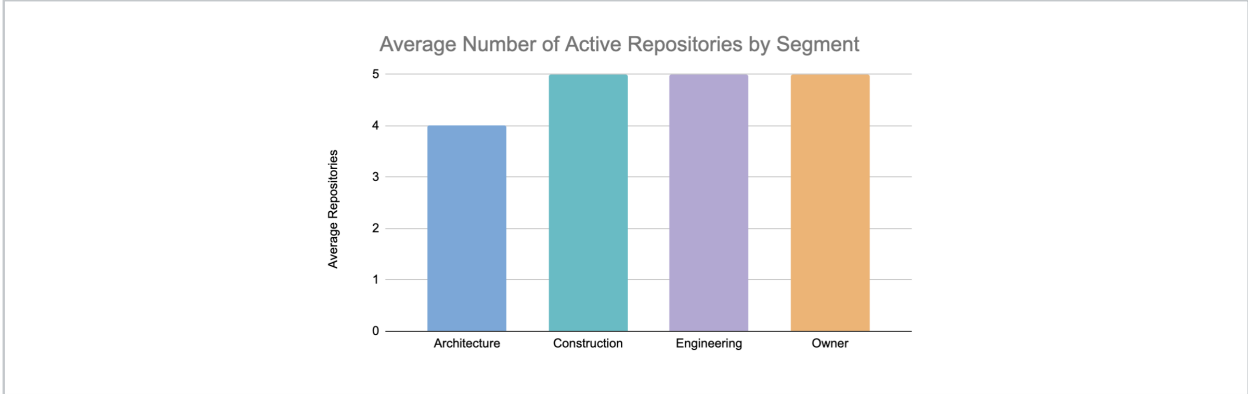
## INSIGHTS FROM THE FINDINGS ABOUT EGNYTE'S AEC CUSTOMERS

### Integrations Driving Efficiency



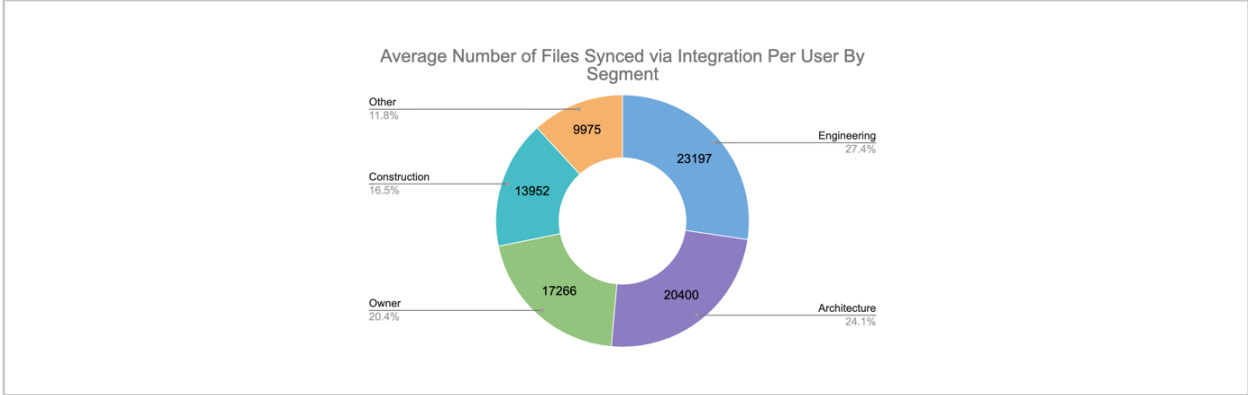
AEC firms recognize the need for centralized platforms, leveraging integrations to manage files from diverse sources. Our analysis of the top 10 integrations revealed varying preferences among AEC customers, reflecting the diverse nature of their workflows. Although some AEC customers prioritize mobile access to Microsoft Office, others rely on web browsers. New customers start with a fair number of integrations and established customers often have complex workflows, driving a higher need for integration.

### Data Repository Dynamics Across Segments



On average, each segment maintains five active data repositories. Architecture, being specialized, averages four data repositories, while construction, due to its complexity, leads with five. Engineering aligns with construction, reflecting similar data storage needs. Owners also maintain an average of five repositories, reflecting their diverse data management requirements. This finding spotlights the broad challenge of administering and protecting content across multiple, fast-growing data repositories.

### User Behavior in File Syncing



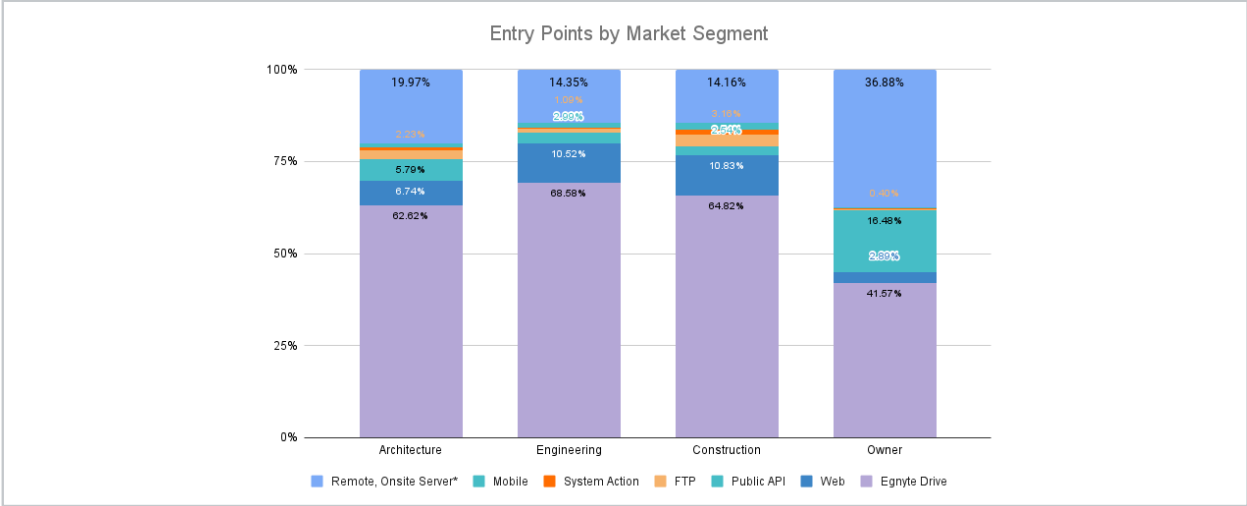
Engineering users emerge as the most active users in file syncing, aligning with their frequent data access and updates. Architecture users closely follow because they iterate designs and require updates for extended design teams. Owners and construction users synchronize data less frequently because they may be referencing the files to build structures instead of making file updates.

<sup>1</sup>Smart Cache (FKA Turbo) is the next-generation hybrid technology platform from Egnyte.  
<sup>2</sup>Storage Sync is Egnyte's hybrid file-sharing and collaboration technology. With Egnyte Storage Sync, files on any on-site server local storage device (direct attached, NAS, or SAN) can be synced with Egnyte Cloud, enabling users to store, share, and access files seamlessly across storage systems and the cloud.

# Critical Insights Into File Creation and Access

Efficient project outcomes hinge on seamless file access, sharing, and collaboration. This section presents metrics like the percentage of files created, entry point access, and average search efficiency.

## Entry Points and File Formats



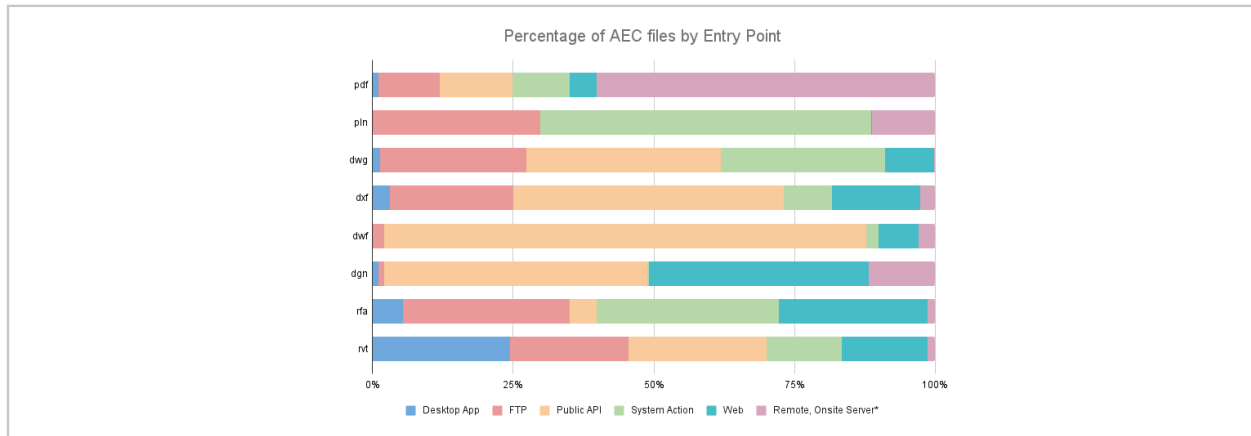
\* Remote, Onsite Servers combines Smart/Turbo and Storage Sync entry points.

There are distinct entry point preferences for each segment.

- ▶ **Architects** rely on the Egnyte Map Drive, constituting a dominant 62.62% of firms utilizing this entry point. This signifies a penchant for seamlessly integrating mapped network drives into their design workflows and creating links within design files. The consistent hybrid approach incorporating a remote, onsite server at 19.97% suggests that architects shared a need with engineers to ensure they can access the latest design files across storage platforms. Although architects leverage the web entry point to a low extent (6.74%), their focus on desktop tools and mapped drives becomes apparent. The moderate usage rate of Public APIs of 5.79% indicates an architecture firm’s willingness to integrate with external tools or customized solutions.
- ▶ **Engineers** echo the architectural findings, with a significant 68.58% of firms utilizing Egnyte Map Drive. This underscores the vital role of mapped network drives in engineers’ daily workflows for effective file management. The remote, onsite server remains a consistent entry point at 14.35%, reflecting a shared emphasis on the need for a hybrid approach to access the latest file across storage platforms. Engineers, however, exhibit a slightly higher affinity for the web entry point (10.52%), implying a great need to access the expanded feature set in the web app. Public APIs are utilized to a lesser extent (2.99%) than architecture firms, suggesting that direct integrations or custom solutions are less pervasive in engineering workflows.
- ▶ **Construction** professionals mirror their counterparts in architecture and engineering, favoring the Egnyte Map Drive entry point at 64.82%. The construction industry’s workflows align with the general AEC trend, emphasizing the importance of mapped network drives. Remote, onsite server usage at 14.16% signifies a shared interest in making the latest project files available to remote teams across storage platforms. The web entry point, at 10.83%, reveals the construction segment’s moderate reliance on the web app feature set. Public API usage is low at 2.54%, suggesting a low prevalence of direct integrations or customized solutions in construction workflows.

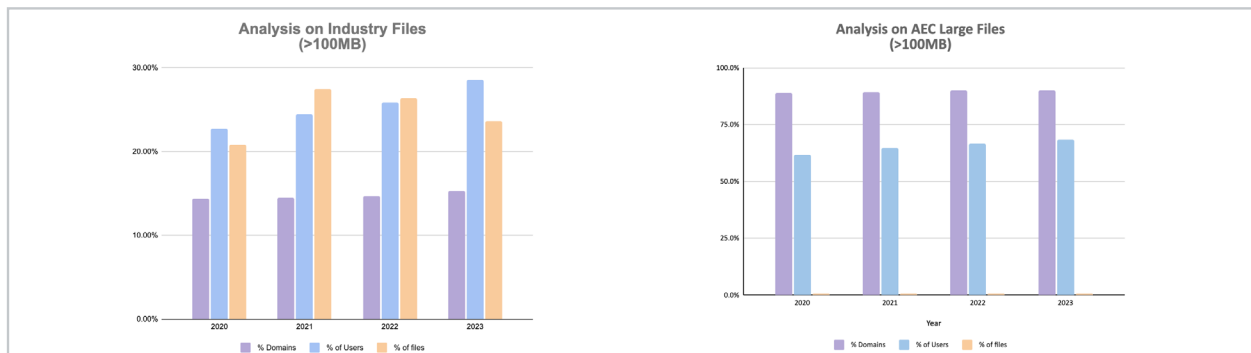
- ▶ **Owners**, who are positioned at the helm of AEC projects, present distinct entry point preferences. Their usage of Egnyte Map Drive at 41.57% is notably lower than in other segments, indicating a potential detachment from day-to-day file access and management. However, their significant reliance on the remote, onsite server entry point at 36.88% underscores a strong emphasis on performance optimization, reflecting a desire for swift access to critical project data. The limited usage of the web entry point (2.89%) suggests a reduced reliance on remote or web-based file access compared to the AEC segments. In comparison, the relatively high usage of public API entry points at 16.48% indicates a greater interest in integrations or customized solutions tailored to owner-specific needs or reporting requirements.
- ▶ **General Observations:**  
Remote, onsite servers and FTP are not commonly used as entry points in the daily workflows of AEC professionals. These findings suggest direct file syncing or FTP file transfer is not a dominant aspect of their work routine. Additionally, automated system actions and mobile access entry points are not frequently utilized, indicating that they are not commonly used in the daily routines of AEC professionals.

## AEC File Type Entry Point Preferences



The analysis of AEC file formats reveals variability in how different file types are accessed across entry points. While some file types show minimal preference for entry through certain channels like the desktop app, others exhibit varied preferences across FTP, public API, system actions, web, and remote, onsite servers. This variability suggests that entry point preferences are influenced by factors such as file size, security requirements, integration needs, and user behaviors. For instance, system actions and remote, onsite servers may be preferred for automatic syncing and faster access, respectively. Overall, understanding these entry point preferences is crucial for optimizing file management workflows in the AEC industry.

## AEC File Formats, Increasing Size And Number Of Collaborators



## AEC Large File Usage Across Domains, Users, and Files

- ▶ **Consistent Increases Over Time:** The data reveals a consistent upward trend in the percentage of domains, users, and files with large sizes from 2020 to 2023. This suggests that there is a growing prevalence of the usage of substantial data sizes within the AEC industry.
- ▶ **Dominance in Domains and Users:** AEC consistently outperforms all industries regarding the percentage of domains and users dealing with large files. This indicates that many AEC entities and professionals regularly handle large-sized files (i.e., those over 100 MB).
- ▶ **Lower Proportion of Large Files:** Despite a high prevalence of large files at the domain and user levels, the percentage of total files classified as large in AEC remains relatively low. This implies that while many users and domains in the AEC industry deal with large files, these files may not constitute a major portion of the total file volume.

## Comparison with All Industries

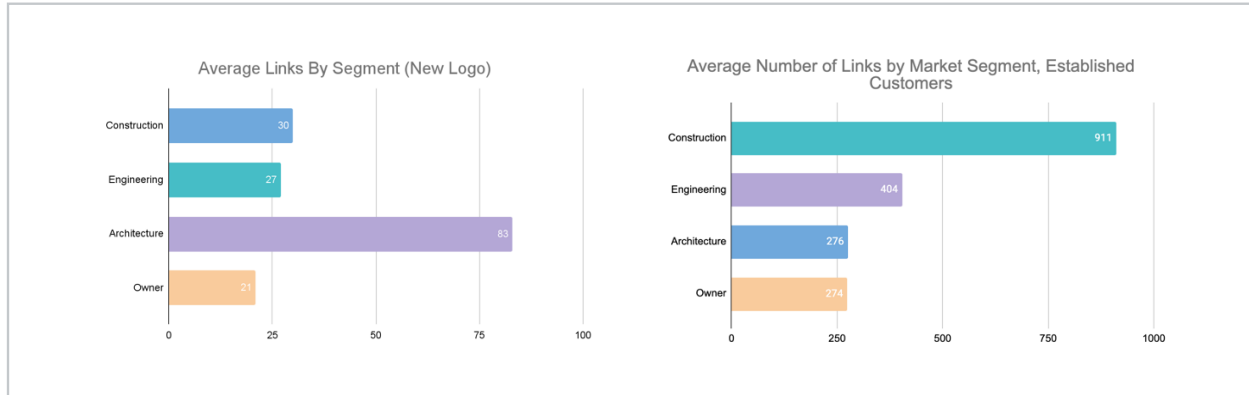
- ▶ **AEC Dominance in Large Files:** Across all years, the AEC industry consistently surpasses all industries in the percentage of domains, users, and files with large sizes. This suggests that dealing with large files is a distinctive characteristic of the AEC sector, along with a growing need to rapidly exchange large files.
- ▶ **Changing Landscape:** The comparative data also reveals that the gap between AEC and all industries slightly widens over the years, indicating a progressive divergence in the handling of large files.

## Key Observations and Critical Insights

- ▶ **Industry-Specific Characteristics:** The consistently higher percentages of domains and users with large files in AEC emphasize the industry's unique data requirements. AEC professionals frequently engage with larger files than their counterparts.
- ▶ **Volume vs. Prevalence:** Although large files are most prevalent in AEC domains and among users, the overall proportion of large files to the total file volume is low. This suggests that even though large files are common, they may not constitute a substantial part of the entire data landscape in the AEC industry.
- ▶ **Growing Data Complexity:** The upward trend over the years signals an increasing demand for the handling of large files within the AEC industry. This could be attributed to the growing complexity of designs, simulations, and collaborative projects, necessitating the management of substantial data sizes.

In conclusion, the AEC industry exhibits a distinctive pattern of dealing with large file sizes, demonstrating a higher prevalence across domains and users and a unique proportion relative to the overall file volume.

## Sharing Evolution: New vs. Established Customers



New customers engage in active collaboration, with architects leading at 83 links per year. Established customers exhibit mature collaboration techniques, and construction professionals average 911 links per year. This progression signifies the deepening of relationships and a shift from introductory sharing to comprehensive collaboration.

### Key Observations

- ▶ The variance between new and established customers within each market segment highlights the natural progression from initial collaboration to mature and comprehensive information exchanges.
- ▶ The substantial increase in links for established customers underscores the deepening and evolving relationships, with a shift from introductory information sharing to detailed and ongoing collaboration.
- ▶ The higher number of links for established customers signifies a richer and more intricate exchange of project-related information, reflecting a high level of trust, understanding, and shared objectives between service providers and customers.

## STRATEGIC CONSIDERATIONS AND CONCLUSION

In navigating the era of increasing data storage, AEC professionals should prioritize efficient collaboration tools, robust data management techniques, and scalable storage solutions. Embracing advanced compression techniques and cloud-based platforms has become imperative. Increasing file sizes reflect the industry's evolution, empowering professionals to harness the potential of large and intricate datasets to advance projects and the industry.

# Recommendations for AEC Firms

## USING CLOUD STORAGE SOLUTIONS

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AEC firms can strategically adopt cloud storage solutions that meet their current data management requirements and position themselves for future success in a rapidly evolving industry by implementing the following recommendations:

### For IT Teams:

- ▶ **Assess Data Growth Patterns:** Conduct a thorough assessment of your organization's data growth patterns, taking into consideration historical trends and future projections including the growing use of reality-capturing and other data growth drivers. Understanding how your data storage needs are evolving over time will help in making informed decisions regarding cloud storage capacity.
- ▶ **Plan to Scale:** Embrace cloud storage solutions that offer scalability to accommodate the dynamic demands of the AEC industry. Ensure the chosen platform can be seamlessly scaled up as your data volume increases, preventing disruptions in your workflow.
- ▶ **Safeguard Data with Security Measures:** Prioritize cloud storage providers with robust security features to safeguard sensitive AEC data. Look for encryption protocols, access controls, and compliance certifications to ensure your data remains confidential and meets industry standards.
- ▶ **Evaluate Integration Capabilities:** Ensure the chosen cloud storage solution integrates seamlessly with your existing workflows and tools. Compatibility with AEC software and project management tools is crucial for a streamlined and efficient data management process.
- ▶ **Conduct Cost-Efficiency Analysis:** Conduct a comprehensive cost-efficiency analysis, considering storage costs, data transfer fees, and potential hidden charges. Choose a cloud storage solution that aligns with your budgetary constraints while providing the necessary technological features.
- ▶ **Prioritize Data Recovery and Backup:** Prioritize cloud storage platforms that offer robust data recovery and backup options. AEC data is often mission-critical, and having reliable backup mechanisms in place is essential to preventing data loss and facilitating business continuity.
- ▶ **Consider the Impact on Compliance:** Ensure the selected cloud storage solution complies with industry regulations and data protection laws relevant to the AEC sector. This is particularly crucial when dealing with sensitive architectural, engineering, and construction data.
- ▶ **Invest in Training and Support:** Invest in comprehensive training programs for your team to ensure they are well-versed in utilizing the features of the chosen cloud storage solution. Additionally, opt for providers with excellent customer support to promptly address any issues.
- ▶ **Monitor and Adapt Approach:** Implement a strategy for continuously monitoring your cloud storage usage and adapt your approach based on evolving needs. Regularly assess your data management practices, explore new features offered by the cloud provider, and adapt your strategy to stay ahead of industry trends.



## For Project Teams:

- ▶ **Look for Collaboration Features:** Select cloud storage solutions that enhance collaboration within your organization. Features like real-time collaboration, version control, and secure sharing options are vital for AEC professionals who often collaborate on intricate models, project drawings, and simulations.
- ▶ **Invest in Training and Support:** Ensure AEC professionals receive training to effectively utilize collaboration features and seek cloud storage providers with excellent customer support.

## INVESTING IN DATA SECURITY SOLUTIONS

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AEC firms can enhance their data security measures, navigate emerging threats, and establish robust foundations for safeguarding sensitive information across the industry.

## For IT Teams:

- ▶ **Conduct Comprehensive Security Audits:** Conduct thorough security audits across all AEC industry segments. Identifying vulnerabilities and areas for improvement is crucial to establishing a robust foundation for data protection.
- ▶ **Invest in Training and Resources:** Allocate resources for comprehensive training programs, ensuring employees are well-versed in cybersecurity best practices. This investment will empower staff members to recognize and effectively respond to potential threats, enhancing the overall security posture.
- ▶ **Implement Multiple-Factor Authentication (MFA):** Strengthen access controls by prioritizing the implementation of Multiple-Factor Authentication (MFA) across all segments. This security measure has showcased a positive trend in adoption and is instrumental in preventing unauthorized access to sensitive data.
- ▶ **Enhance Password Policy:** Consistently review and enhance existing password policies across all segments. Consider adopting advanced password management practices to fortify partner and employee foundational understanding of password security, promoting a secure access environment. Restrict the utilization of commonly guessed passwords (such as 123456) and forbid password-sharing among users.
- ▶ **Implement Targeted Cybersecurity Measures:** Implement targeted cybersecurity measures tailored to the specific challenges faced in each segment. This may include access controls, encryption protocols, and cybersecurity training programs designed to address the unique cybersecurity landscape of the AEC industry.
- ▶ **Automate Retention, Deletion, and Archiving (RAD):** Explore opportunities for streamlining data management practices, especially in industry segments with low RAD adoption, such as the architecture segment. Increasing the adoption of RAD features can enhance efficiency and compliance within data management protocols. Additionally, automated data management enhances user efficiency and reduces the company's cyberattack vulnerability. Attackers tend to be most content when they have access to a large amount of information.

- ▶ **Emphasize Continuous Improvement:** Emphasize the importance of continual improvement in governance, cybersecurity, and technology adoption across all industry segments. Regular assessments, the use of adaptive strategies, and a commitment to ongoing improvement foster a resilient and secure operational environment within the AEC industry.
- ▶ **Conduct Regular Security Assessments:** Implement regular security assessments to stay proactive in identifying and addressing evolving cybersecurity threats. This includes keeping abreast of the latest industry standards, technologies, and best practices to maintain a resilient security infrastructure.

### For Human Resources and Training Departments:

- ▶ **Invest in Training and Resources:** Human resources and training departments should allocate resources to the provision of comprehensive training programs for all employees to enhance their awareness of cybersecurity best practices.
- ▶ **Industry-Specific Training and Oversight:** Provide industry-specific training and oversight for segments like the construction, engineering, and owner segments, which have exhibited a need for improvement in governance practices. This targeted approach ensures that governance measures are aligned with the unique challenges faced in each segment.

### For Executives and Decision-Makers:

- ▶ **Emphasize Continuous Improvement:** Executives and decision-makers should emphasize continual improvement in governance, cybersecurity, and technology adoption across all segments.
- ▶ **Encourage Collaborative Cybersecurity:** Encourage collaborative cybersecurity initiatives that involve stakeholders across different segments. Establishing a collective approach to data security ensures a unified front against emerging threats and fosters a culture of shared responsibility.

## IMPLEMENTING DATA COMPLIANCE POLICIES

AEC firms can establish a robust framework for data compliance, fostering a secure and resilient data management environment that aligns with industry regulations and standards by implementing these recommendations:

- ▶ **Conduct a Comprehensive Compliance Assessment:** AEC firms should initiate a thorough assessment of existing data management practices to identify gaps and potential non-compliance issues. Such assessments should cover data storage, sharing, and collaboration processes, ensuring a holistic understanding of the organization's data landscape.
- ▶ **Customize Policies to Industry Regulations:** Tailor data compliance policies to align with specific AEC sector industry regulations. Given the unique nature of data in architecture, engineering, and construction, it is crucial to address industry-specific requirements for compliance to effectively mitigate risk.
- ▶ **Establish Clear Data Ownership and Access Controls:** Clearly define data ownership within the organization and implement robust access controls. This involves assigning responsibilities for data management and ensuring that access to sensitive information is restricted based on roles and responsibilities, reducing the risk of unauthorized access.

- ▶ **Implement Encryption Measures:** Incorporate encryption measures to safeguard sensitive data during storage, transit, and collaboration. Encryption adds an extra layer of security, protecting data from unauthorized access.
- ▶ **Regularly Update Policies to Reflect Evolving Regulations:** Stay abreast of changes in data protection regulations and update compliance policies accordingly. The AEC industry is dynamic, and compliance requirements may evolve. Regularly reviewing and updating policies ensures that firms adhere to the latest standards.
- ▶ **Provide Ongoing Training on Data Compliance:** Conduct regular training sessions to educate employees about the importance of data compliance and the specific policies in place. This will create awareness, promote a culture of compliance, and reduce the likelihood of unintentional compliance violations. This approach encourages users to speak up when they notice something.
- ▶ **Document Compliance Procedures:** Document the procedures related to data compliance in a clear and accessible manner. This documentation should serve as an employee reference, detailing the steps for secure data handling, sharing, and storage, promoting consistency across the organization.
- ▶ **Conduct Periodic Audits and Assessments:** Implement a regular auditing process to assess the effectiveness of data compliance policies. Conducting periodic audits helps in the identification of potential weaknesses, enabling firms to promptly address issues and continuously improve their data management practices.
- ▶ **Collaborate with Legal and IT Teams:** Foster collaboration between legal and IT teams to ensure data compliance policies are legally sound, technically feasible, and aligned with the organization's IT infrastructure. This interdisciplinary approach enhances the effectiveness of compliance measures.
- ▶ **Invest in Technology Solutions:** Explore and invest in advanced technology solutions that facilitate compliance, such as data management platforms with built-in compliance features. These tools can automate certain compliance aspects, streamline processes, and enhance data security. Working with a technology partner that understands your compliance requirements is important.

## IMPLEMENTING FILE-SHARING SOLUTIONS

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Efficient file-sharing solutions are pivotal to seamless collaboration and data management within the AEC industry. Because professionals in this dynamic environment seek to enhance their workflows, the following recommendations, which were derived from the trends and strategic insights uncovered in Egnyte's analysis, were tailored to professionals in AEC firms aiming to successfully implement file-sharing solutions.

### Assess Integration Needs:

- ▶ Conduct a comprehensive analysis of your firm's workflows and identify specific integration needs.
- ▶ Understand the diverse nature of AEC workflows and recognize the varying preferences of team members regarding tools and platforms.

### Prioritize Centralized Platforms:

- ▶ Emphasize the need for centralized platforms to manage files from diverse sources.
- ▶ Consider platforms that offer seamless integration with popular tools used in the AEC industry, such as Microsoft Office, and prioritize mobile and web browser access.

### **Customize Integration Strategies:**

- ▶ Tailor integration strategies based on your firm's unique requirements. New customers may start with many integrations while established customers with complex workflows may require a higher level of integration.

### **Repository Dynamics:**

- ▶ Understand the data storage needs of people in different departments, considering the average number of active repositories.
- ▶ Recognize that specialized segments like architecture may have different repository dynamics than complex segments like construction.

### **Scalable File Sharing:**

- ▶ Adopt scalable file-sharing solutions to efficiently manage the growing prevalence of large files in the AEC industry, ensuring flexibility for collaborative projects.
- ▶ Choose scalable file-sharing solutions that can be seamlessly integrated with project workflows, enhancing collaboration and ensuring a smooth exchange of large files among AEC professionals.

### **User Behavior in File Syncing:**

- ▶ Acknowledge the role-centric usage patterns of people in different industry segments, such as the active file-syncing behavior of engineering users.
- ▶ Develop strategies that enable frequent data access and updates for people in specific roles within the AEC industry.

### **Enhance Accessibility and Collaboration:**

- ▶ Prioritize tools and solutions that enhance file accessibility, sharing, and collaboration.
- ▶ Consider implementing cloud-based solutions to address challenges in document access, especially for architects and builders facing difficulties in this regard.

### **Optimize Entry Points and File Formats:**

- ▶ Tailor entry points for file access based on the preferences of professionals in each segment. For example, architects favor Egnyte Map Drive while construction professionals align with AEC trends.
- ▶ Optimize file formats based on usage patterns, such as PDFs for collaborative project documentation and DWG files with Storage Sync for a hybrid technology approach.

### **Evolve with User Collaboration:**

- ▶ Recognize the evolution of collaboration from introductory sharing to comprehensive engagement for new and established customers.
- ▶ Implement solutions supporting mature collaborations, especially for established customers with high link averages.

**Address Growing File Sizes:**

- ▶ Acknowledge the challenges posed by the surge in file sizes and strategize for efficient data management.
- ▶ Prioritize collaborative technologies, robust data management practices, and scalable storage solutions to meet the industry's evolving demands.

**Embrace Advanced Compression and Cloud Solutions:**

- ▶ Stay at the forefront of industry trends by embracing advanced compression techniques and cloud-based platforms.
- ▶ Understand increasing file sizes as a reflection of industry evolution and empower professionals to harness the potential of large datasets for advancing projects and the industry.

In conclusion, implementing these recommendations will empower AEC firms to seamlessly integrate file-sharing solutions, fostering efficiency, collaboration, and adaptability in the ever-evolving landscape of the AEC industry.



# Conclusion

## SUMMARY OF KEY INSIGHTS AND RECOMMENDATIONS

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As the data requirements for the AEC industry continue to outpace industry growth, there is an urgent need for professionals in the AEC sector to focus on robust data management and governance. This emphasis is crucial to preventing potential catastrophe in the event of unmanageable data growth. To effectively address this challenge, decision-makers in AEC firms can leverage key report findings and prioritize actionable recommendations. These insights serve as the foundation for a concise roadmap aimed at enhancing data management practices within the industry.

### Cloud Storage Adoption:

- ▶ **Unprecedented Growth:** The AEC industry has witnessed remarkable growth in cloud storage adoption, commencing at 3.34 TB in 2018 and culminating in an impressive 25.64 TB in 2023.
- ▶ **Segment Dynamics:** Cloud storage adoption is expected to significantly increase in the architecture, engineering, and construction segments with the construction segment displaying the most dramatic surge.

## Factors Driving the Surge:

- ▶ **Data Availability:** Advancements in data availability provide AEC professionals with powerful tools to utilize extensive datasets and enhance project workflows.
- ▶ **Data-Intensive Software:** The rise of data-intensive software has driven the surge, creating demand for substantial storage capabilities for managing intricate models, project drawings, and collaborative projects.

## Future Projections:

- ▶ **Continual Expansion:** Insights from heavy platform users indicate a trajectory poised for continual expansion with a growing emphasis on data-driven decision-making and new data sources.

## Securing AEC Data:

- ▶ **Industry Vulnerability:** The industry faces vulnerabilities, as highlighted by the SmartMarket brief on data resilience. 77% of firms cannot endure more than five days without access to documents during a ransomware attack, which can prevent data access for 20 days or longer.
- ▶ **Governance Practices:** Varied governance practices across segments, with architecture demonstrating efficiency, while construction, engineering, owners grapple with high-severity issues.

## Cybersecurity Measures:

- ▶ **Trends and Challenges:** TFA adoption shows a positive trend (67 to 75% of AEC segments use TFA). Construction leads in RAD features (52%) while architecture lags (9%), suggesting that there are opportunities for streamlining data management practices.
- ▶ **Segment-Specific Measures:** Implement targeted cybersecurity measures, including access controls, encryption, and training, tailored to the specific challenges faced by each segment.

## File-Sharing and Collaboration:

- ▶ **Integration Strategies:** AEC firms recognize the need for centralized platforms and varying integration needs. New customers start with integrations while established ones require more complex workflows.
- ▶ **User Behavior:** Engineering users are most active in file syncing, aligning with frequent data access and updates. The challenges involved in document access emphasize the need for cloud-based solutions.
- ▶ **Entry Points and Formats:** Tailor entry points and file formats based on segment preferences. All segments favor the Egnyte Map Drive.

## Implications of Growing File Sizes:

- ▶ **Challenges and Strategies:** Increasing file sizes pose challenges related to collaboration, data storage requirements, and potential performance issues. Embrace collaborative technologies, robust data management, and scalable storage solutions.

## Recommendations for AEC Firms:

- ▶ **Cloud Storage Solutions:** Assess data growth patterns, plan for scalability, prioritize security measures, ensure collaborative features, integrate specialized tools with existing workflows, analyze cost-efficiency, prioritize data recovery, and consider compliance.
- ▶ **Data Security Measures:** Conduct security audits, invest in training, implement multiple-factor authentication, enhance password policies, adopt targeted cybersecurity measures, explore RAD features, focus on continual improvement, and provide industry-specific employee training.
- ▶ **Data Compliance Policies:** Conduct compliance assessments, customize policies based on industry regulations, establish clear data ownership, implement encryption measures, regularly update operational policies, provide ongoing training, document compliance procedures, conduct audits, foster collaboration between legal and IT teams, and invest in technology solutions.
- ▶ **File-Sharing Solutions:** Assess integration needs, prioritize centralized platforms, customize integration strategies, understand repository dynamics, align with user behavior, enhance accessibility, optimize entry points to project data and varying file formats, evolve with the level user collaboration, address growing file sizes, and embrace advanced compression and cloud solutions.

## FUTURE TRENDS AND CHALLENGES IN AEC DATA MANAGEMENT

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The AEC industry is on the cusp of a technological revolution that will reshape the landscape of data management. As we look ahead, several trends and challenges are poised to influence how AEC professionals handle, secure, and collaborate on the ever-expanding volume of data integral to their projects. It is essential to understand these dynamics to develop strategies that meet the evolving needs of professionals in the industry.

### Continued Surge in Data Volume:

- ▶ **Anticipated Trend:** The trajectory of data storage growth, as evidenced by the remarkable surge in its usage is likely to continue. With the advent of increasingly sophisticated design tools, simulations, and collaborative platforms, AEC professionals will generate and manage larger datasets than ever.
- ▶ **Challenge:** Managing the unprecedented growth in data volume poses challenges related to storage capacity, network bandwidth, and the overall scalability of existing systems. AEC firms must invest in solutions that can be seamlessly scaled to meet escalating demand.



## Increasing AEC Domains and Users of Large Sizes:

- ▶ **Anticipated Trend:** The number of AEC domains and users dealing with large file sizes is expected to increase.
- ▶ **Challenge:** This trend introduces challenges related to data storage, collaboration, and data accessibility. AEC firms need to adapt their infrastructure and collaboration practices to efficiently handle the growing prevalence of large files.

## Integration of Advanced Technologies:

- ▶ **Anticipated Trend:** AEC professionals will increasingly integrate advanced technologies, such as artificial intelligence (AI) and machine learning (ML) into their workflows. These technologies can enhance design accuracy, project simulation, and construction processes, further amplifying the industry's reliance on data-intensive tools.
- ▶ **Challenge:** The integration of advanced technologies introduces the challenges of interoperability and data compatibility. AEC firms need to ensure their data management systems can support and adapt to the diverse outputs generated using these innovative tools.

## Automated Data Generation and Governance:

- ▶ **Anticipated Trend:** In the coming years, user tools for faster data generation and new expert AI systems for generating data will emerge.
- ▶ **Challenge:** This trend necessitates the use of automated data governance policies, including classification and governance policies, to keep up with the accelerated generation of data.

## Enhanced Cybersecurity Measures:

- ▶ **Anticipated Trend:** As cyber threats become increasingly sophisticated, AEC firms will prioritize and invest in advanced cybersecurity measures. This includes not only protecting data from external threats but also maximizing protection against potential cyber threats rather than solely focusing on compliance.
- ▶ **Challenge:** Achieving a balance between robust cybersecurity measures and seamless collaboration is a challenge. Striking a balance between security and accessibility is crucial to effectively safeguarding sensitive AEC data.

## Collaborative Cloud Ecosystems:

- ▶ **Anticipated Trend:** Cloud-based collaboration platforms will evolve into comprehensive ecosystems, facilitating seamless data sharing, real-time collaboration, and project management. This trend will enable AEC professionals to work efficiently across geographical boundaries.
- ▶ **Challenge:** Ensuring data integrity, version control, and access permissions within collaborative cloud ecosystems will be paramount. AEC firms need to establish governance practices that enable collaboration without compromising data security.

## Data-Driven Decision-Making:

- ▶ **Anticipated Trend:** The emphasis on data-driven decision-making will intensify with AEC professionals relying on analytics and insights to inform critical project decision-making. This trend will lead to increased reliance on big data analytics and business intelligence tools.
- ▶ **Challenge:** Effectively harnessing the power of data for decision-making requires a cultural shift within organizations. AEC firms must invest in data literacy training and foster the view of data as a strategic asset.

## Sustainable Data Management Practices:

- ▶ **Anticipated Trend:** A growing focus on sustainability in the AEC industry will extend to data management practices. Firms will seek eco-friendly solutions, including optimized data storage strategies.
- ▶ **Challenge:** Balancing sustainability with the data-intensive nature of AEC projects is a challenge. Striking a balance between environmental responsibility and data management efficiency will be crucial.

## Evolving Regulatory Landscape:

- ▶ **Anticipated Trend:** The regulatory landscape governing data management practices in the AEC sector will evolve. New regulations may emerge, requiring firms to adapt their practices to keep up with evolving compliance requirements.
- ▶ **Challenge:** Keeping abreast of changing regulations and swiftly adapting data management practices to align with new compliance requirements will be a persistent challenge for AEC. Regular audits and legal oversight will become essential components of AEC data *governance*.

In shaping future strategies, AEC professionals should proactively address these anticipated trends and challenges. This involves not only adopting the latest technologies but also fostering a culture of adaptability, collaboration, and data-driven innovation. By staying ahead of the curve, AEC firms can position themselves for success in a data-centric future in which technological advancements will play a pivotal role in shaping the industry's trajectory.



Egnyte is the secure multi-cloud platform for content security and governance that enables organizations to better protect and collaborate on their most valuable content. Established in 2008, Egnyte has democratized cloud content security for more than 22,000+ organizations, helping customers improve data security, maintain compliance, prevent and detect ransomware threats, and boost employee productivity on any app, any cloud, anywhere. For more information, visit [www.egnyte.com](http://www.egnyte.com).

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