



2022

# Egnyte's AEC Data Insights Report

Findings From Egnyte's Study of 3,000 AEC Firms and Their Data

# INTRODUCTION



3,000 AEC customers store, secure, and share petabytes of data on Egnyte's platform.

Architecture, Engineering, and Construction (AEC) companies were once digital laggards. But now, post pandemic and digitalization, AEC companies are very much data companies. Data from actual Egnyte customers proves it.

Businesses accustomed to tight schedules and tight margins expect significant productivity gains with all that data at their fingertips, but many of them are still struggling to keep pace with the changes. The growth in volume, type, and velocity of data places increased strain on AEC firms' ability to manage and secure project content and ensure quality outcomes.

With 3,000 AEC customers storing, securing, and sharing petabytes of data on our platform, Egnyte has unique insights into how the industry is adapting to the rapid digitization of day-to-day operations. This report, developed in collaboration with Egnyte's AEC practice, analyzes trends in data growth and usage across a broad selection of AEC customers and disciplines.

In addition to analyzing the industry impacts of more data and file sharing, this report also provides expert advice on how to manage and secure your data so your teams can focus on getting projects done faster.

# KEY FINDINGS

1

## AEC Firms Store and Act on More Files Than Other Industries

AEC firms, on average, store more files in Egnyte than any other industry—2.49x as many as the cross-industry average. This underscores just how quickly things are changing for companies that just a few years ago were more accustomed to blueprints than point cloud data and 360-degree images.

2

## Data Volume Growth is Explosive

On average, Egnyte's AEC customers store 3.5 TB of data, which represents a 31.2% compound annual growth rate (CAGR) from 2017 to 2021.

3

## Data Sprawl is a Growing Challenge

The number of individual files stored by AEC customers grew by 23.4% CAGR from 2017 to 2021. This proliferation leads to data sprawl, which only compounds data management challenges.

4

## Usage Patterns Vary Widely Across Disciplines

An AEC worker's role has a direct impact on how they interact with files, as well as the types of files they use. For example, General Contractors share the most files, while Owners access files the most. As another example, images make up a much larger share of Architects' storage (29.1%) than Specialty Contractors' storage (14.5%).

5

## Data Security Issues Vary by Company Size and Discipline

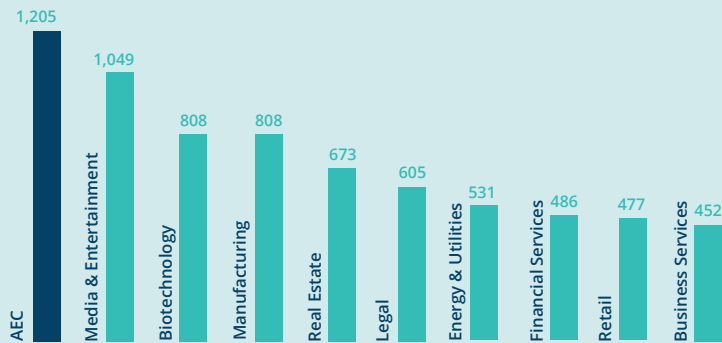
With more data comes more risk. Egnyte flagged a staggering growth in high-severity issues—from 3,793 in Q4 2020 to 16,122 in Q4 2021, a 325% increase across AEC domains.

## KEY FINDING 1

# AEC Firms Store and Act on More Files Than Other Industries

More than 17,000 organizations across a diverse set of industries trust Egnyte to reduce risk and IT complexity, prevent ransomware and IP theft, and boost employee productivity. Among those organizations, AEC firms have more files on average than any other industry (Graph 1). The difference is even more pronounced when you compare AEC firms to Egnyte customers as a whole. The typical AEC firm manages 149% (2.49x) more files than the cross-industry average—a remarkable disparity, even for such a document-heavy industry.

The Average Number of Files Stored by Egnyte Customers by Industry (in Thousands) GRAPH 1



### Why AEC Firms Trust Egnyte



Reduce Risks & IT Complexity



Prevent Ransomware & IP Theft



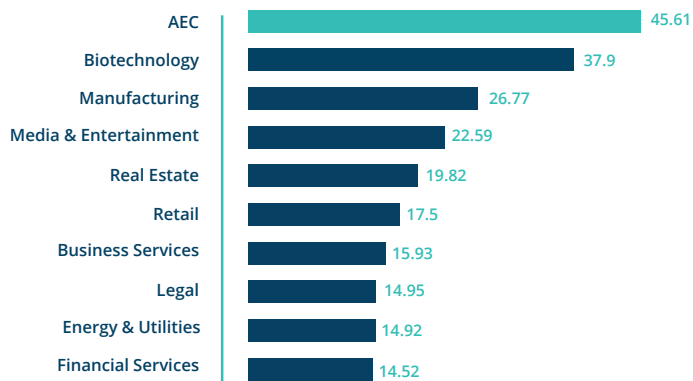
Boost Employee Productivity



AEC firms also interact with files more often, on average (Graph 2). Project team members upload, download, move, or delete files more often than any other industry in our data set. This is a reflection of the logistical reality of the industry. For example, when a General Contractor prepares for a project, they'll create huge folder indexes to gather bids, estimate data, real-time market data, and other information so they can make their bids. Then they have to pull in tradespeople, who will go back and forth on designs, before a final contract is in place to set timelines for the build.

GRAPH 2

Total Activity on Files: Upload, Download, Moved, Deleted (in Thousands)



## KEY FINDING 2

# Data Volume is Rapidly Expanding

Egnyte's AEC customers have, on average, nearly quadrupled their data storage in recent years. They've gone from 0.9 TB in 2017 to 3.5 TB in 2021, with larger firms storing more than five times that amount. This growth points to increased digitization in the AEC industry, as well as greater usage of larger document types, like BIM and CAD files.

Expect data volumes to continue to grow in the years ahead, as new data sources and collection methods emerge and firms become more data-driven.

The challenge will be maintaining and managing that growth. Many of today's AEC firms default to keeping everything, which drives up storage costs and creates potential data security and litigation risks. To reduce risk, understand what content needs to be retained and what doesn't—then implement a sustainable and automated process to manage that lifecycle.



**3.5 TB**

Average Data Stored  
by Egnyte AEC  
Customers



**31.2%**

CAGR in Average Data Stored  
by Egnyte AEC Customers  
from 2017 to 2021



**17.9 TB**

Average Data Stored  
by Larger Firms  
(1,001+ Employees)

### AEC Firms Should Consider These Questions:

- ▶ How do we store, manage, and access an ever-growing volume of information?
- ▶ How do we scale and fund data management tools at the speed required to keep pace?
- ▶ Where do we find people and technology to support this effort?

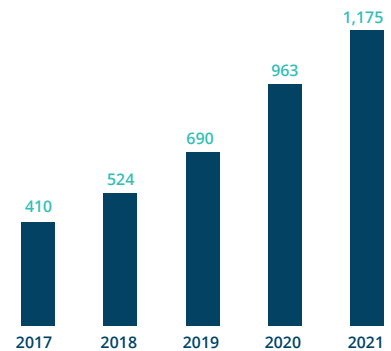
### KEY FINDING 3

## Data Sprawl is a Growing Challenge

The average AEC firm stores 1.17 million individual files, with a 23.4% CAGR between 2017 and 2021 (Graph 3). That growth rate is somewhat slower than what we're seeing in overall data volumes (Key Finding 2), likely due to the types and locations of files being stored. For example, firms increasingly rely on larger digital files from various sources, such as drone footage and 3D imagery.

These larger files are often stored across several repositories—file servers, public clouds, and other applications—but the amount of available data is rarely the problem. Instead, the biggest barrier to productivity gains is getting the right data quickly and trusting its accuracy. Firms need modern content management systems to address this issue.

GRAPH 3  
Average Number of Files Stored for AEC Firms (in Thousands)



#### AEC Firms Should Consider These Questions:

- ▶ How do we aggregate all our project content in one place?
- ▶ How do we ensure large files can be accessed quickly, on and off the jobsite?
- ▶ How do we reliably and quickly move files between jobsite locations and the cloud?

## KEY FINDING 4

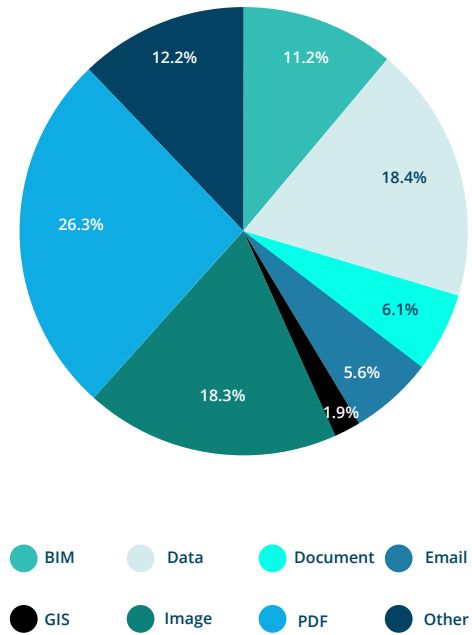
# Usage Patterns Vary Widely Across Disciplines

The average AEC firm stores more files than the average company in any other industry, in part, because of the variability in file types they use on the job. When looking across all AEC disciplines (Owners, Architecture, Engineering, General Contractors, and Specialty Contractors), almost half of all stored files are PDFs and images (Graph 4).

As we examine each discipline individually, there are significant differences in how firms utilize file types throughout the course of a project. For example, BIM files make up nearly 13% of all storage for architecture firms, but that figure drops to 3.3% for General Contractors (Graph 5).

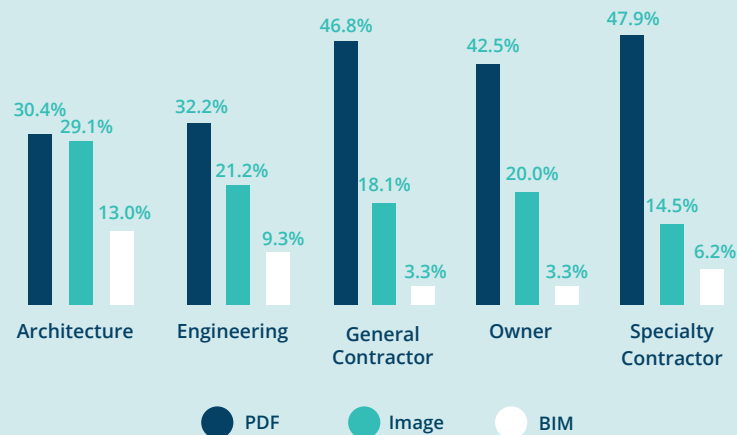
GRAPH 4

Types of Files Stored by AEC Firms



GRAPH 5

Percentage of File Types Stored by Discipline





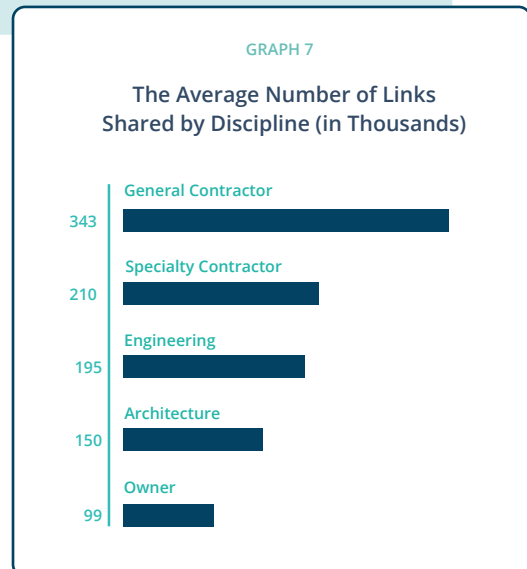
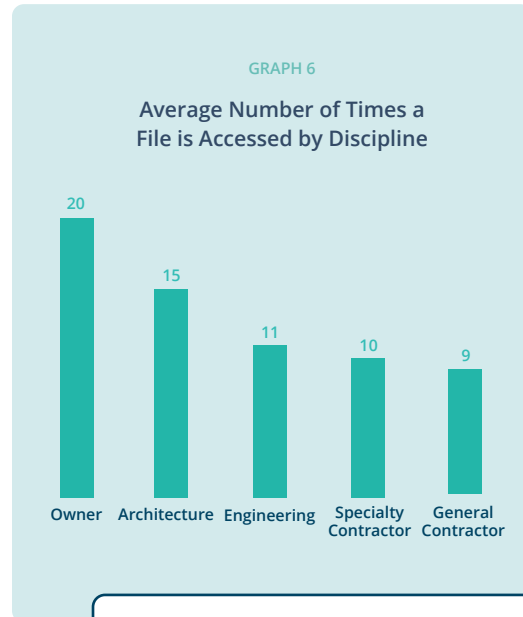
## File Access vs. File Sharing

Firms accumulate the most documents during the preconstruction and construction phases. Project team grows exponentially at these points, adding general contractors and specialty contractors. Each of these disciplines have teams that need to reference project drawings and documents to:

- ▶ Develop logistics and sequencing plans
- ▶ Develop budgets
- ▶ Conduct value engineering
- ▶ Create bid packages
- ▶ Develop construction schedules

And different disciplines interact with files differently. For example, General Contractors access files at the lowest rate (Graph 6), but they share files at the highest rate (Graph 7). The average GC account shared a total of 373,000 file links over the course of the year, while specialty contractors shared an average of 210,000 file links over the same period.

Many General Contractors use construction management software, like Procore or Autodesk Construction Cloud. It makes sense that they access files less frequently, as those documents reside on industry cloud applications.



### AEC Firms Should Consider These Questions:

- ▶ Can all project disciplines easily access and share files when they need to?
- ▶ What measures are in place to ensure document version control?
- ▶ How easy is it to recover lost or deleted files?

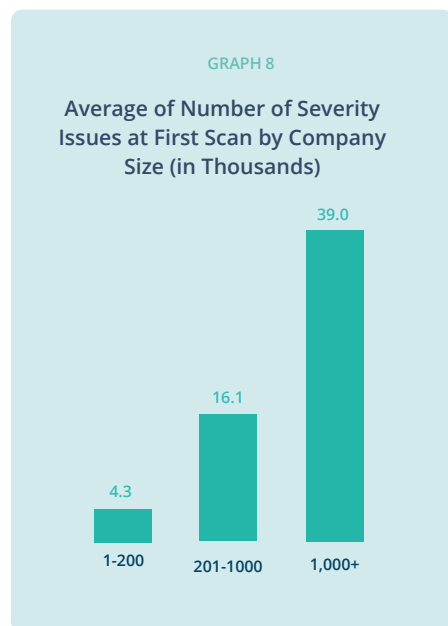
## KEY FINDING 5

# Data Security Issues Vary by Company Size and Discipline

The ability to access and share large volumes of data from anywhere and on any device is a boon for the AEC industry. But when companies don't follow best practices, it introduces risk, including potential productivity impacts, data loss, regulatory fines, and damage to workers, the environment, and the firm's reputation.

The Egnyte platform can scan users' files to identify potential threats and recommend remediations. For Egnyte's AEC customers, the number of "high severity" issues captured on first-time scans increased from an average of 3,793 issues identified in Q4 2020 to 16,122 in Q4 2021, a 325% growth from year to year (Graph 8).

An issue is high severity when it represents the possible loss or exposure of confidential information or other adverse event that results in significant impact on the business. Issues could include an unintentional act like making a private link public, or a sign of more nefarious activity, like an outgoing employee downloading gigabytes of data.



The increase in data security issues come as AEC firms increasingly find themselves the target of ransomware attacks. Many firms believe they don't have any sensitive data, but that's simply not true.

Sensitive data could include:

- ▶ Employee Social Security numbers
- ▶ Business credit cards
- ▶ Health records for safety documentation
- ▶ Bank statements

And that doesn't account for the troves of proprietary project information from customers and partners. This underscores the importance of thoughtful data governance and security practices to fight against a growing list of data threats.

### AEC Firms Should Consider These Questions:

- ▶ How easy is it to identify where sensitive content lives across sources and apps?
- ▶ What measures are in place to ensure data issue identification and remediation?
- ▶ Are there controls in place to ensure secure sharing of project files?

## THE IMPACTS OF BEING A DATA COMPANY

The volume of files and transactions AEC firms handle today can create a host of usability and management challenges. For example, when files are frequently moved or deleted without sufficient controls or administration, data integrity is lost and no one knows where to find the right version of a file.

The rise in specialty applications, such as Procore, Bluebeam, and Raken, has led to a constant movement of files from one location to another. However, these licenses can be expensive, so companies typically limit how many they purchase for a specific application.

This leads to several issues. For starters, people without access are left waiting for someone to send them a PDF of the data to view it. And when project partners are excluded from these applications, the project also risks losing critical insights. Taken collectively, this can translate to more rework and higher costs.

Moreover, this combination of added files and added applications increases the chance that project data loses its integrity. Common issues AEC firms face include:

- ▶ Downloading and maintaining a separate file version on a personal device
- ▶ Conflicting information and versioning issues
- ▶ Accidental file deletion

# DATA MANAGEMENT IN AEC BEST PRACTICES



The pandemic accelerated many AEC firms' migration to the cloud, primarily to enable more effective communication between employees working from home and teams working on project sites. These companies need to make strategic decisions about how to manage and secure their data effectively without disrupting productivity and project outcomes.

The trends described in this report highlight the growth of cloud data across Egnyte customers, and the increasing pressure on industry disciplines to update their data management strategies. As such, we've summarized a few key process and technology recommendations to help define or refine your journey to more effective data management and project productivity.

## PLANNING

Document a data management plan that details the approach, policies, and procedures for tactical functions and disciplines. Include scheduled, periodic reviews and updates.

## STORAGE

Understand the volume and velocity of your data as well as the use and accessibility requirements to determine which storage best fits data management objectives, e.g., data warehouses, data lakes, on-premises, or in the cloud.

## BACKUP

Include plans for storing up-to-date copies of data and the steps required for its recovery, including any data that may be stored on end-user devices.

## SECURITY

Consider systems and processes to protect data and comply with corporate, industry and government regulations.

## ACCESS

Develop security and data management protocols that include credential issuance and replacement, if lost. Ensure permissions provide fine-grained access controls. Directions about accessing data across disparate sources can also be considered.

## PRIVILEGES

Consider user privileges and gates as a subset of access, such as:

- ▶ Who owns the data?
- ▶ Can the data be shared, changed, or copied?
- ▶ Who can access the data?
- ▶ What data should all company employees have access to?
- ▶ When can the data be accessed?
- ▶ Is the data considered sensitive information?

## AUTOMATION

Apply automation to sharing controls, data lifecycle management, and monitoring, especially when working with large volumes of project data.

## DATA QUALITY

Follow established data governance directives and integrate data cleansing into the data lifecycle.

## DATA TAGS

Append unique, persistent identifiers to office and project data and document descriptions to facilitate data discovery.

## METRICS

Measure the efficacy of data management systems and programs.



# CONCLUSION

This report spotlights the growth of data volume and usage in Egnyte customer deployments. In addition to the trend of overall data growth, we saw an increase in the number of files used to store data, and issues associated with it. These trends indicate that data is scattered in more individual files and sources across the project ecosystem.

AEC firms' IT requirements continue to prove challenging, and there is an urgent need for a unified data management approach. Companies have to enable people to work together across locations and at a speed that allows them to be productive, while protecting data from exposure, damage, or deletion in the face of increasing cyber threats.



Egnyte provides the only unified cloud content governance solution for collaboration, data security, compliance, and threat prevention for multi-cloud businesses. More than 17,000 organizations trust Egnyte to reduce risks and IT complexity, prevent ransomware and IP theft, and boost employee productivity on any app, any cloud, anywhere. Investors include GV (formerly Google Ventures), Kleiner Perkins, Caufield & Byers and Goldman Sachs. For more information, visit [www.egnyte.com](http://www.egnyte.com).

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