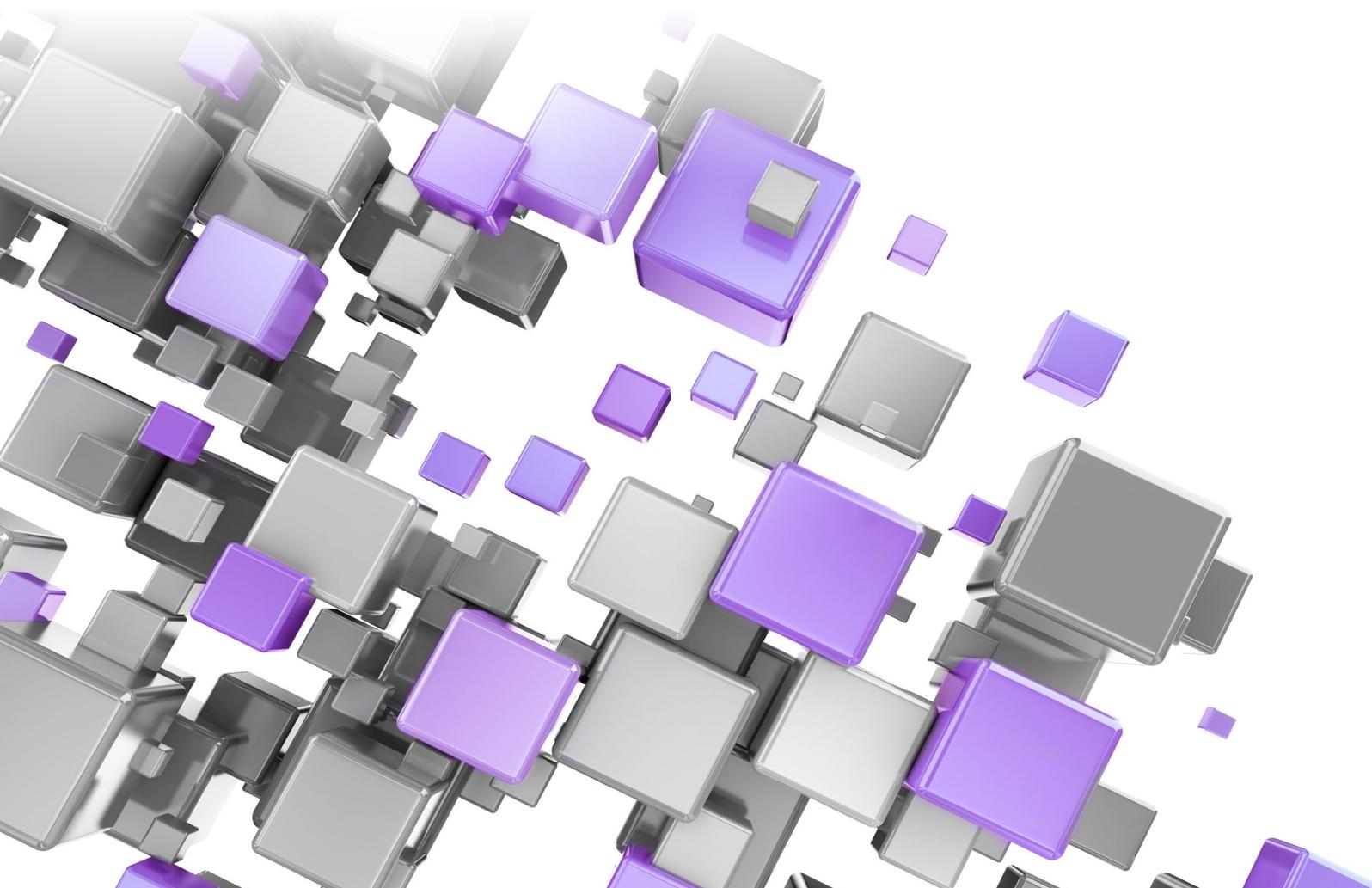




STORAGE OPTIMIZATION ANALYTICS

Reduce data storage costs
with intelligent cloud migration



THE ENTERPRISE DATA EXPLOSION. IS YOUR ENTERPRISE READY?

Global volumes of data are expected to surge from 33 zettabytes at end of 2018 to 175 zettabytes by 2025 (a compounded annual growth rate of 61 percent)¹. To put that into perspective, if you tried to store 175 zettabytes of data on BluRay discs, the stack of discs you'd need would be 23-times higher than the distance to the moon.

Think about the data that's already flowing into your file systems, content management systems, databases, and a multitude of other enterprise applications. Then look ahead to the volumes predicted for 2025. It's clear that enterprise data storage will come under increasing pressure.

Managing this extraordinary growth is a major challenge. We're already seeing exponential increases in data storage costs. Terabytes of data are added to enterprise servers daily, with on-premise data storage costing up to hundreds of dollars per terabyte per month. Knowing how much of that data you need, and how much of it is low-value, outdated, or duplicate will become more and more essential. Having the answers allows enterprises to confidently decide whether to remove, archive, or move data to lower-cost cloud storage. According to a recent IDC survey summary², traditional on-premise storage costs over three times more than public cloud storage. Enterprises that know what actions to take with their data will save millions of dollars in annual storage costs.

¹ <https://www.networkworld.com/article/3325397/idc-expect-175-zettabytes-of-data-worldwide-by-2025.html>

² <https://blocksandfiles.com/2019/06/24/private-cloud-storage-costs-more-than-trad-it-storage/>

THE DATA STORAGE CHALLENGE

CIOs, IT leaders, and content owners urgently need visibility into their massive enterprise content to reduce storage costs and/or gain useful insights. Unfortunately, that's not possible using traditional storage management tools. Although these can count the bytes and even de-duplicate data, they're unable to compute the business value of content or the risk of losing data.

Without full visibility into the value of their content, it's impossible to be confident about deleting data that's stale, duplicate or low-value and/or moving it to help reduce storage costs. It also means that valuable content can be deleted accidentally. The result? Enterprise data storage costs continue to rise because of the lack of clarity over what needs to be retained.

A NEW SOLUTION IS NEEDED... NOW

What enterprises need is a solution that can automate the migration of content to lower-cost storage – as well as providing file-level traceability and real-time ROI tracking. This is why a storage optimization analytics solution should be a key component of enterprise IT strategy.

This white paper discusses Accenture's storage optimization analytics solution that's helping clients save millions in storage costs. It incorporates search and analytics to provide context for deep understanding of enterprise content and automate data movement with confidence. Scalable and customizable for business needs, the solution enables companies to reduce significant storage costs and maximize the value of their content faster.

A recent survey³, conducted by the Enterprise Storage Forum to gauge IT and business leaders' data storage plans, found that:

1. **aging gear, lack of storage capacity, and high costs of operation** are the top-three enterprise storage challenges

2. **performance and cost savings** are the top-two factors driving storage purchase decisions

³ <https://www.enterprisestorageforum.com/storage-management/survey-reveals-tech-trends-reshaping-data-storage.html>

UNDERSTANDING THE CONTEXT OF ENTERPRISE DATA

To start making more informed decisions about which data should be retained, moved or deleted, IT leaders and content owners need greater visibility into their enterprise content.

Specifically, they need to be able to answer:



When was the content created?
Last **accessed**?



Who **created** it?
Are they still employed?



Which **business unit** owns the content?



Which **products** are associated with it?



How much does it **cost** to store?



Is it covered by a **data retention** policy?



Can we move the content to low-cost **cloud** storage?



Are there **risks** associated with moving it?

Quick and accurate answers to all these questions can be supplied by combining search, text analytics and natural language processing (NLP). Because this enables documents and their content to be more accurately read and classified, content owners and IT staff can move data with confidence. In just a few clicks, they can access a dashboard view of their data footprint and remove superfluous data in line with all compliance and retention requirements.

The solution ultimately:

- 

provides **actionable visibility** into enterprise content in high-cost storage
- 

drives **storage cost savings** through rapid detection of duplicate or near-duplicate content
- 

identifies **content provenance, ownership and frequency of use**
- 

applies **domain-specific business rules** to identify eligible content and automate migration to lower-priced storage
- 

enables **cloud-readiness**
- 

tracks **savings** (potentially millions) and computes ROI in real-time
- 

accelerates **value discovery** through a 360° view of enterprise data

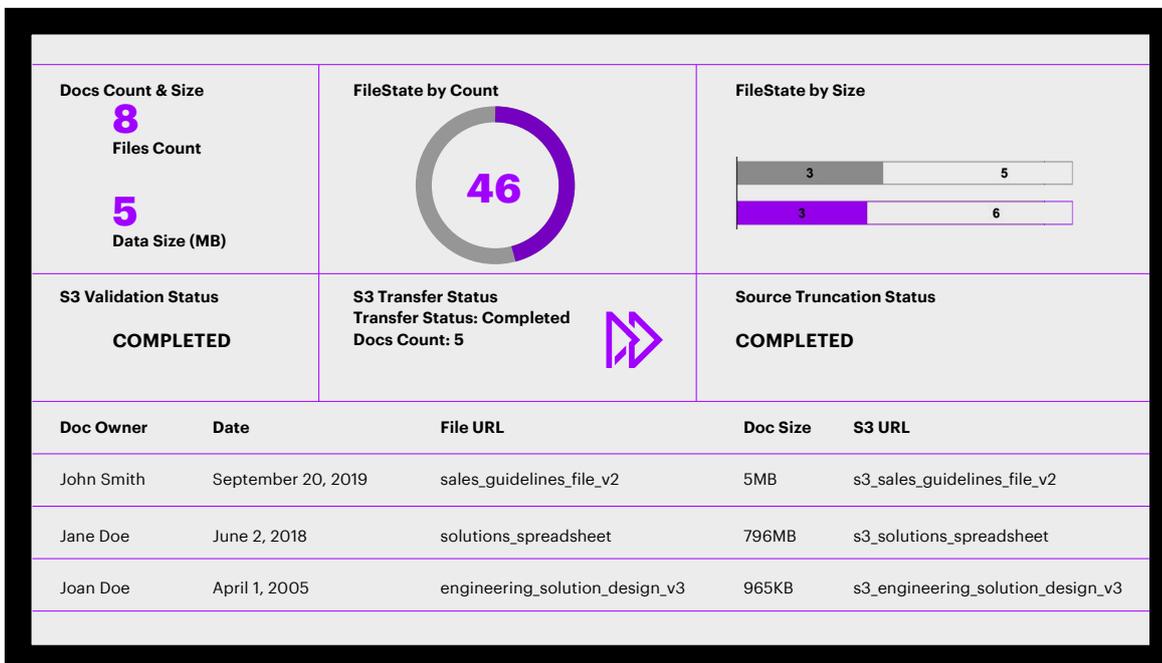


Figure 1: Example storage analytics user dashboard

REDUCING STORAGE COSTS AND ACHIEVING ROI WITH A CUSTOM-BUILT SOLUTION

SOLUTION OVERVIEW: TYPICAL WORKFLOW

Powered by enterprise search and analytics techniques, the Accenture solution's typical workflow is shown in Figure 2 and explained below. It spans from capturing and enriching data from the original sources and applying automated business rules for data movements to traceability and ROI reporting. Because each business has unique infrastructure and requirements, supporting custom rules based on all context is key. It's this unique capability that differentiates our approach from standard storage solutions.

- 1.** The Accenture solution leverages **30+ API-level connectors in Accenture Aspire Content Processing Framework** to capture information about the content in enterprise storage, such as metadata, ownership and ACLs (access control lists). It's recommended that organizations consider tackling file systems first: because of their potential age and the unregulated nature of file systems, moving or deleting low-value content from this source can result in immediate and substantial storage cost savings. The metadata is then published to a search engine (open source such as Elasticsearch and Solr, or other commercial search engines). **Search-driven analytics** is implemented to provide a dynamic view of content status and help build **custom business rules** for content classification and management. Supporting custom rules based on all context is a key differentiator of this approach.
- 2.** The solution integrates with **cloud platforms** and diverse **source systems** to automate the migration of appropriate content to lower-cost cloud storage and achieve ROI. In cases where the content can be removed entirely, deletions may be handled with scripting or application-specific methods. Real-time search and analytics help trace the content and compute savings. **Traceability** is essential for keeping the confidence of management and the trust of content owners.
- 3.** An Accenture **consulting analyst** serves as a liaison to each client – modeling strategies to **maximize ROI**, managing system access requests, and handling audit and reporting needs. The services team, content owners, and stakeholders can use search and analytics to model business rules for content classification and conduct what-if scenarios to calculate ROI.
- 4.** In a mature storage analytics application, **Optical Character Recognition (OCR) and full text extraction (an NLP technique)** can be combined with **machine learning** to support more intelligent content classification, detect duplicates/near-duplicates, and provide **AI-enabled analytics and alerts**.

COMPUTING ROI IN REAL-TIME

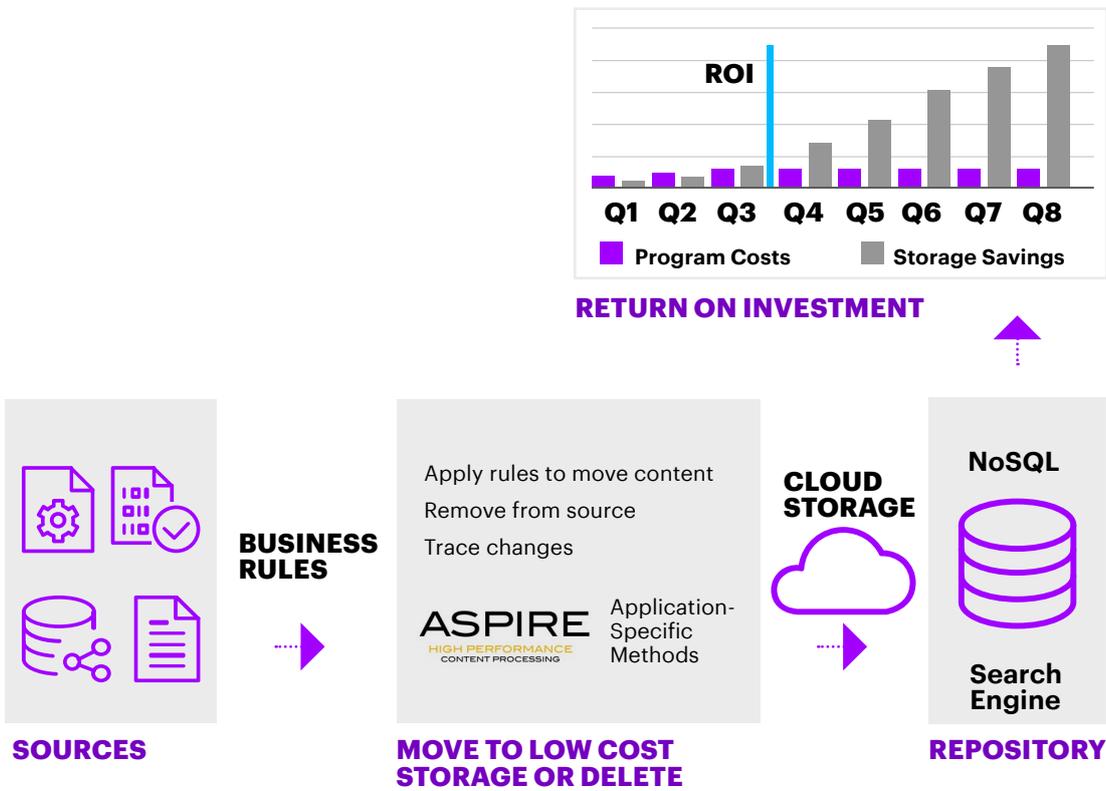


Figure 2: Accenture's storage optimization analytics solution – typical workflow

EXAMPLE BUSINESS RULES



Retain active files on primary storage



Archive content inactive for two or more years



Archive content authored by **contractors** and **terminated employees**

REFERENCE ARCHITECTURE

Shown in Figure 3, the reference architecture illustrates the key components of the storage optimization analytics solution – how our content acquisition and enrichment technologies, the search engine, business rules, cloud storages, and user interfaces all work together.

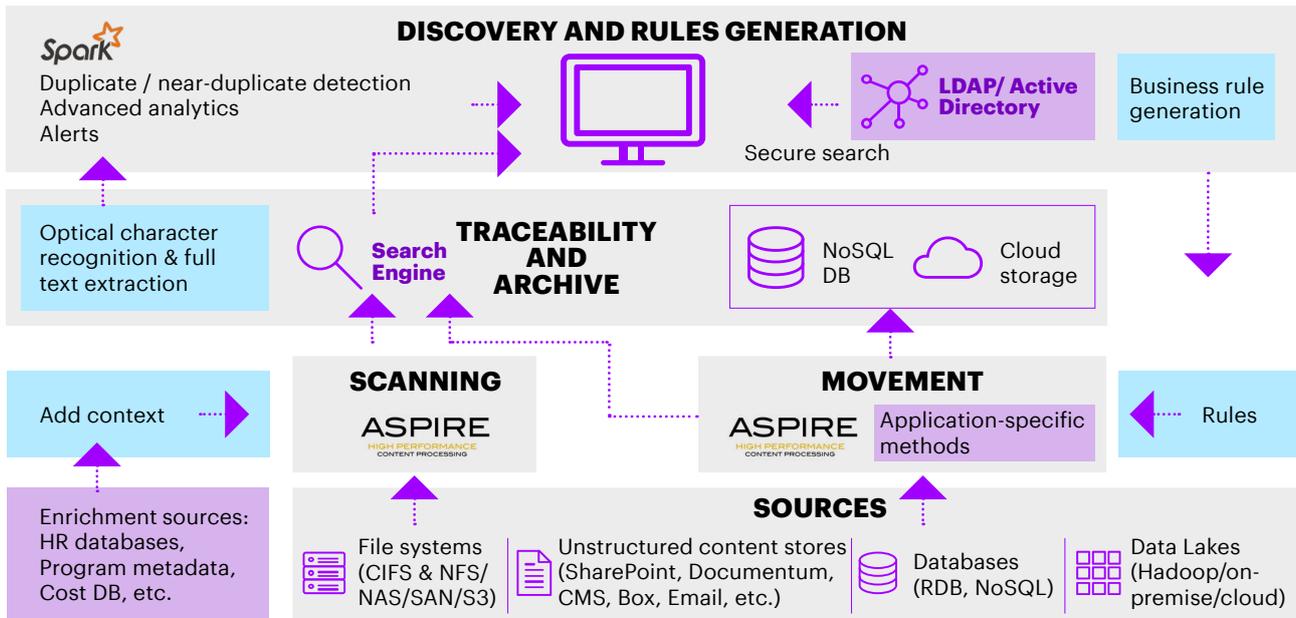


Figure 3: Solution reference architecture

KEY FEATURES

Our storage optimization analytics solution encompasses strategy planning, solution design, technologies and services to ensure objectives and ROI are achieved. This end-to-end approach, combined with the ability to model custom business rules, offers a number of features (see Figure 4) that are not available in basic storage solutions.

FEATURE	SEARCH & CONTENT ANALYTICS APPROACH
Source compatibility	Over 30 sources (file systems, CMS, structured, data lakes, custom, etc.)
Metadata sources	Leverage file system and file level metadata
Use signals from full-text	Harvest and process full-text for deep analytics (optional)
Add context	Join to external data sources to add context (inactive users, lab, product, etc.)
Business rules	Couple access and age criteria with company-specific and industry rules tailored to each client and use case
Dashboards	Categorize over any signal captured from metadata, text, or contextual data accessible to admins and end-users as needed
Relevancy ranked search	Secure search interface for deep analysis for admins and users
Secure search access for end-users	End-user search enforces source system security
Automate move and delete	Provide traceability for every action performed
Operations	Backed by a services and technical team to manage the entire operation

Figure 4: Key features of the Accenture storage optimization analytics solution

FROM STORAGE COST REDUCTION TO UNLOCKING NEW VALUE FROM ENTERPRISE CONTENT

An enterprise storage optimization analytics solution can be implemented in three phases (see Figure 5) – with the final phase providing the most mature, comprehensive program:

1.

The **planning phase** identifies business objectives and low-cost storage vendors as well as computing potential savings and ROI.

2.

The **implementation phase** delivers a working application, custom business rules, automated data movement capabilities, user search and analytics dashboard, and reporting.

3.

The **mature phase** leverages more content sources and sophisticated NLP and analytics techniques to not only provide storage cost-reduction but also enable a 360° view of enterprise content.

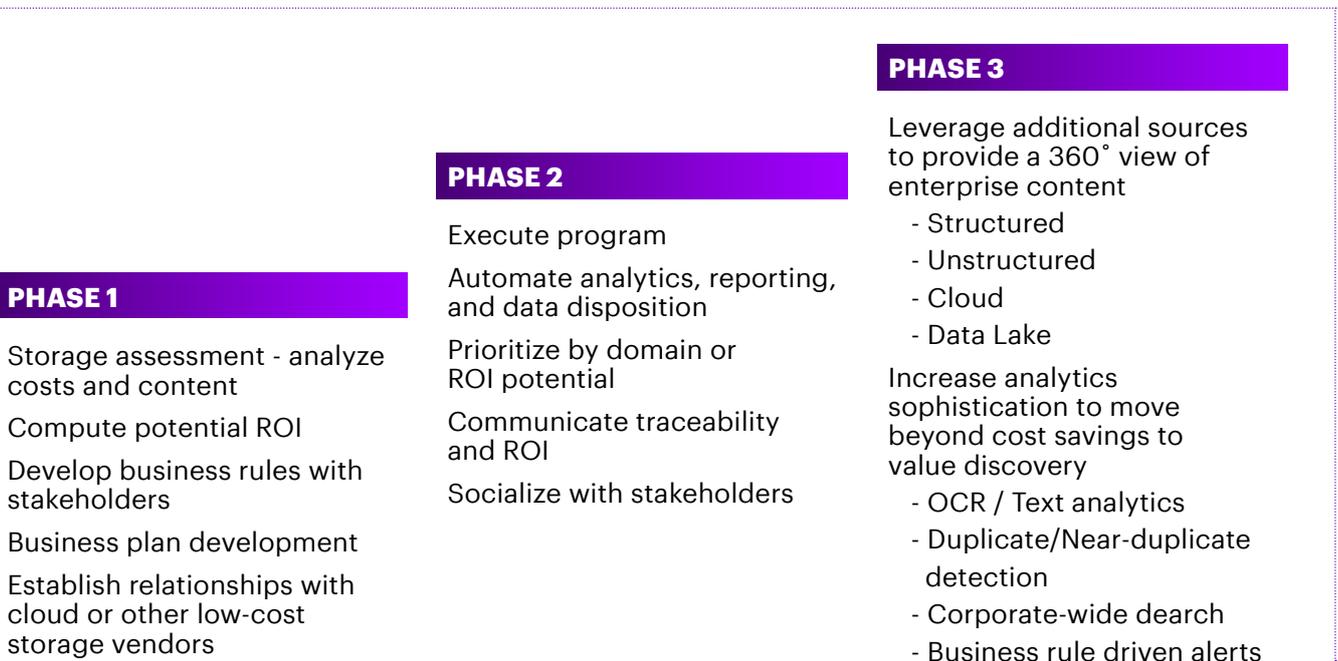


Figure 5: Three phase implementation program

WHAT'S YOUR STORAGE COST REDUCTION AND OPTIMIZATION STRATEGY?

As your organization starts to design and implement a storage analytics solution, it's essential to ensure that your IT staff and/or implementation partners have the bandwidth and expertise required to conduct a thorough assessment for aligning the technology with business objectives.

The outcome? A mature storage optimization analytics solution provides your enterprise with a 360° view into enterprise content for more advanced analytics. This will enable you to move beyond cost management and start innovating and creating new value with insights mined from your massive and growing content.

By combining search with analytics across high volumes of unstructured and structured data, we're helping clients solve data storage challenges and deliver clear ROI.

[View our Storage Optimization Analytics on-demand webinar](#) for an in-depth overview from our solution architect.

[Connect with us](#) to see how our solution can help you to unlock new value from your enterprise content.



ABOUT SEARCH & CONTENT ANALYTICS

Search & Content Analytics, formerly Search Technologies, is part of Accenture Applied Intelligence. We live in a data-driven world. But not everyone is making the most of their data. 80 percent of all data is unstructured – imagine the hidden insights trapped within unstructured enterprise content such as voice, images and emails. At Search & Content Analytics, our mission is to help enterprises unlock the full value within their unstructured and structured data. We combine innovative technologies such as machine learning and natural language processing with search and big data analytics to transform the way people work. Whether it's improving intranet and website search, monitoring internal communications to detect insider threats, helping recruiters match jobs to résumés, analyzing oil wellhead reports, or exploring molecular data, we bring comprehensive search and analytics services to clients across industries. Clients include organizations in e-commerce, media, healthcare, financial services, recruiting, manufacturing, and the government sector. What knowledge and insights are trapped in your data? Let us help you find better answers.

Learn more about our capabilities and client work at www.accenture.com/sca

ABOUT ACCENTURE

Accenture is a leading global professional services company, providing a broad range of services and solutions in strategy, consulting, digital, technology and operations. Combining unmatched experience and specialized skills across more than 40 industries and all business functions – underpinned by the world's largest delivery network – Accenture works at the intersection of business and technology to help clients improve their performance and create sustainable value for their stakeholders. With more than 469,000 people serving clients in more than 120 countries, Accenture drives innovation to improve the way the world works and lives.

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