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Digital Preservation

What to consider and why it matters

Essential Guide

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Long live digital data

Providing secure, reliable access to archived digital assets is an investment in the future of your organisation, whether your digital materials contain priceless artefacts or critical business information.

Rapidly increasing volumes and complexity of digital data require more storage and computational power than ever before. Traditional storage models were nothing more than static data backups, but in an increasingly digitised world, users want more. Modern archives must be accessible and available in order to remain – or become – a true asset, while security is more important than ever in a world of data breaches and cyber-attacks.

Digital preservation keeps your digital information alive. By utilising a compliant, flexible centralised storage solution that can be scaled in both capacity and performance from the very beginning of your digital journey, the management of your high value data becomes simpler and more cost efficient. And by avoiding the need to migrate data in the future, data corruption risks are minimised, reducing operational effort and manual intervention.

Why is digital preservation important to business?

- Unique and important digital materials can be protected, preserved and shared with future generations
- Data supports evidence-based decision making for competitive advantage, driving innovation and new initiatives
- Ensuring data storage complies with regulatory and legal requirements mitigates risk and prevents fines
- Streamlining workflows and improving productivity achieves time and cost efficiencies
- Maintaining access to data ensures business continuity and stronger disaster recovery

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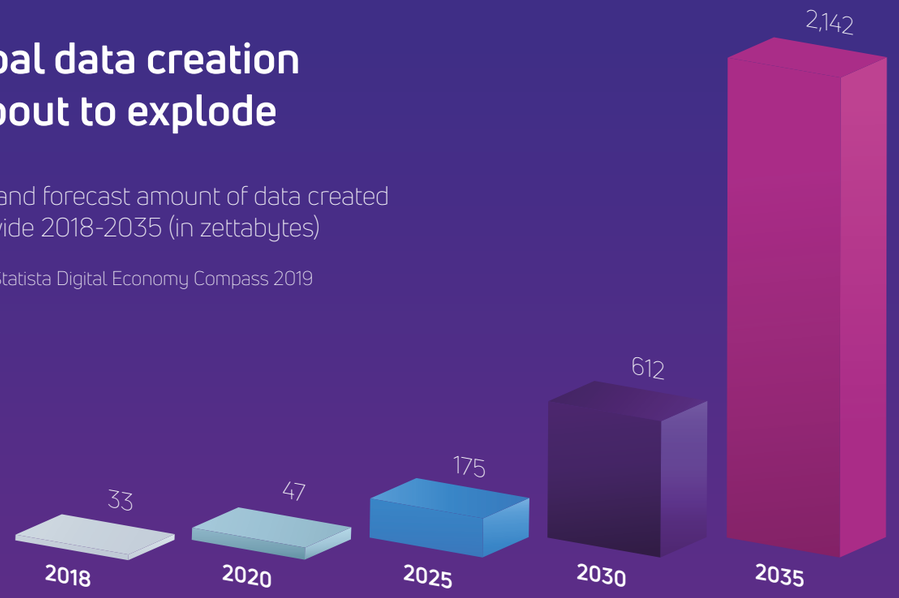
Global data creation is about to explode

Actual and forecast amount of data created worldwide 2018-2035 (in zettabytes)

Source: Statista Digital Economy Compass 2019



> Digital Preservation is the technological challenge to protect through its data the heritage, cultural references or history of an organisation, industry or nation. Whether that be its science, innovations, inventions, art or records, these are projects of huge importance."
>
> **James Melhuish, CAE Strategic Lead for Digital Preservation**

The data race is on

- **40 trillion gigabytes**[1]
  The amount of data expected to be used in 2020
- **3 million years**[2]
  It would take an average user approximately three million years to download all the data that is currently on the internet.
- **1.7mb**[3]
  By the year 2020, about 1.7 mb of new information will be created every second for every human being on the planet.
- **90% of all data**[4]
  was created in the last two years.
- **$274.3 billion**[5]
  The projected worldwide revenues for big data and business analytics (BDA) solutions by 2022.
- **100 terabytes**[6]
  The volume of data stored by most US companies.

Sources: 1. IDC 2. Institute of Physics 3. Forbes 4. IBM 5. IDC 6. IBM

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How to keep your data alive

CAE work closely with you, creating solutions to keep your data robust and accessible. The elements below show how a well-considered data preservation partnership can ensure a future-proof way of protecting your valuable archived materials.

Create a life saving strategy

Your data is fragile and exists in a rapidly changing technological environment. Limited storage and software or hardware obsolescence shorten the lifespan of digital materials that are not properly preserved.

Future proof your data

Whether your data is being stored for future generations, business reference or regulatory compliance, a digital preservation strategy must anticipate long-term storage requirements for growing quantities of data.

Have everything to hand

Digital preservation ensures effortless access to your high value digital materials today, tomorrow and for decades to come. Whether your data archive is supporting research and development, education or business efficiency, the ability to quickly and accurately identify stored materials saves time and money.

Make sure your data is usable

A successful digital preservation strategy will maintain the integrity of your digital assets in the long term and audit the complete data journey for peace of mind and compliance.

Combine your data in one location

As the quantity and complexity of digital materials grow, so do data storage requirements. As a short-term solution, many organisations add additional storage and systems as they are needed, which results in multiple, fragmented silos of data that are expensive to host and manage.

Keep your data secure

Protecting your stored data is vital, and digital preservation can be a balancing act between providing access and maintaining security. Along with the inconvenience of data loss and risk to reputation, GDPR and other legal and regulatory compliance breaches can result in punitive fines.

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How to keep your data alive

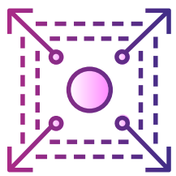
The 6 reasons you should be thinking ahead, in a little more detail.

Create a life saving strategy

Your data is fragile and exists in a rapidly changing technological environment. Limited storage and software or hardware obsolescence shorten the lifespan of digital materials that are not properly preserved.

Keeping important data usable and accessible while protecting it from loss or damage is critical to most organisations, and the creation of a well-defined Digital Preservation Strategy is the first step towards saving the life of your valuable data. By identifying key stakeholders, organisational drivers, data types and volumes, a policy can be developed to assess, retain and protect digital assets well into the future. A long-term preservation strategy keeps digital materials of enduring value alive and available within a flexible, reliable and agile infrastructure.

Future proof your data



Whether your data is being stored for future generations, business reference or regulatory compliance, a digital preservation strategy must anticipate long-term storage requirements for growing quantities of data.

Traditional storage solutions were not designed to support the rapid growth of digital materials experienced by almost every organisation, or the accelerated growth expected in the future. File quantities are growing, with individual data files becoming larger and more complex.

In order to efficiently and effectively manage this rapid data growth, your storage solution must be easily scalable and adaptable to the increased scope required. Scale out infrastructure allows your data storage capacity to expand effortlessly from terabytes to petabytes, with minimal business disruption or risk.

> The pace of data growth is relentless, it's no longer a case of what do we need to do today, but rather what we are doing for tomorrow, especially when tomorrow could mean the next 25 years."
>
> **Mark Smith, CAE Chief Technologist**

Have everything to hand

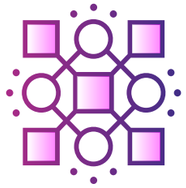
Digital preservation ensures effortless access to your high value digital materials today, tomorrow and for decades to come. Whether your data archive is supporting research and development, education or business efficiency, the ability to quickly and accurately identify stored materials saves time and money.

Simple data backups aren't enough, as the meaning of the material gets lost over time. Instead of a static archive, digitally preserved files can be stored along with rich, indexed metadata, which provides authenticity and context along with the actual content.

In this way, your digital assets remain easily searchable, discoverable and identifiable. Information can be found and disseminated quickly and easily, and the management of the data stays simple, however large your digital data collection becomes.

> Most storage platforms are inherently obsolete, you are wise to start your plans with a data exit strategy."
>
> **Mark Smith, CAE Chief Technologist**

Make sure your data is useable



A successful digital preservation strategy will maintain the integrity of your digital assets in the long term, providing access to files in a useable format.

Unlike traditional backups or archives, digital materials will be regularly assessed so more active management and intervention are required throughout their lifecycle. Effective digital content management procedures mitigate against the inevitable software and hardware obsolescence that comes with the evolution of technology. By regularly migrating files into current formats, data availability is maintained, and advanced protection methods help prevent bit-rot, keeping data complete, readable and accessible.

A robust preservation infrastructure makes it easier to prevent data loss, with diverse storage platforms combined into one system allowing the entire collection to be assessed, updated and protected in a single process while maintaining platform resilience.

Combine your data in one location

As the quantity and complexity of digital materials grow, so do data storage requirements. As a short-term solution, many organisations add additional storage and systems as they are needed, which results in multiple, fragmented silos of data that are expensive to host and manage. Data can be hard to find and access, and storage changes require risky and expensive data migrations.

By consolidating your data into a centralised location, you can easily see and manage every part of your digital collection. By integrating archive management tools, you can provide controlled access to specified areas of data, and a simple, centralised architecture allows departments to efficiently share assets, while also reducing the chance of duplication or deletion .

Keep your data secure

Protecting your stored data is vital, and digital preservation can be a balancing act between providing access and maintaining security. Along with the inconvenience of data loss and risk to reputation, GDPR and other legal and regulatory compliance breaches can result in punitive fines.

A centralised storage solution is the easiest way to manage the security of digital assets and is preferable to overseeing multiple systems or removable devices. The biggest risk to your data is people, and active management can control which specific user profiles are given digital access to read, edit or delete files in pre-defined zones, providing a full chain of custody and comprehensive audit trail.

Robust data security and access strategies can mitigate the risk of accidental data loss and malicious data breaches or cyber-attacks, keeping your high value digital assets safe, secure and protected for decades to come.

CAE are Digital Preservation experts

As IT infrastructure specialists, at CAE we combine our market knowledge with insight into your specific needs to help you adopt the most relevant technology for your organisation.

Why CAE should be your partner of choice

Our digital preservation solutions are tried, tested and designed to ensure that you and your users can access the data you need, when you need it. Offering secure, scalable storage to businesses and organisations preserving high value digital assets, we will share our experience and expertise with you every step of the way.

To book a consultation with one of our specialists

Want to work in partnership with a company that understands the importance of robust digital preservation? Drop us a line and find out how we can work with you to keep your data safe and accessible.

Call us on: **01923 474 7273**
Email: **digitalpreservation@thisiscae.com**

> Digital Preservation is a strategy and not simply a product solution”

James Melhuish, CAE Strategic Lead for Digital Preservation

Digital preservation checklist

Why not use our handy checklist to see where you are in your digital preservation journey? Or call one of our specialists and they can work with you to identify your precise requirements.

- ☐ Create a digital asset register detailing where current materials are stored
- ☐ Estimate your annual digital data growth rate including type and volume of content
- ☐ Identify and detail legal and regulatory compliance requirements
- ☐ Establish the required capacity, uptime, reliability and access speeds
- ☐ List the workflows and tools that should be integrated
- ☐ Determine the number of users and necessary accessibility levels and zones
- ☐ Identify and engage with key stakeholders

Useful data preservation links

- Digital Preservation Coalition >
- Digital Curation Centre (DDC) >
- Collections Trust >
- Archives and Records Association >
- National Archives >

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