iTernity

The Crucial Differences Between Archiving and Backup and How to Use the Two Concepts Profitably

Content

1. Introduction

Archiving and backup - Two terms that do not immediately trigger great emotions. At the same time, however, these are also two topics which are indispensable in the modern world of work and which consciously and unconsciously cause IT managers headaches.

Data security, limited IT budgets, compliance, business continuity, technological change - these terms are already more strongly associated with emotions and clear effects on business success. Ultimately, all these areas are very closely interwoven with archiving and backup. On the following pages, we will explain how you can profitably apply this to your company.

Honestly: have you clearly defined and implemented the boundary between archiving and backup? Um, yeah... by and large... of course...!?

If yes: very good, then skim over this whitepaper and simply pick out the content which will help you to get ahead. We are sure you'll find what you're looking for.

If not: then you are in good company, because this is the question we most often clarify at the beginning of our consultations. Therefore, we would like to give you this whitepaper - not only to differentiate the terms archiving and backup from each other, but also to point out helpful use cases and the advantages for your company.

2. What's What? Archiving and Backup Explained In Brief

Backup and archiving are often still regarded as a „necessary evil", a time- and cost-intensive duty without direct impact on the success of a company. The advantages often only become apparent at second glance, for example in risk minimization, compliance, IT security, or the digitalization of business processes. But, before we start to look at the use cases, let's first examine the question: What exactly is the difference between archiving and backup?

In a nutshell: When it comes to archiving, everything revolves around the topic of traceability and the long-term storage of company data. Backup, on the other hand, aims at business continuity and thus at the short-term storage and recovery of data.

Backup describes making a regular copy (duplication) of important data and applications in order to be able to restore them in an emergency. Such an emergency can be a natural disaster, an unexpected loss of data, a hard disk failure, or a ransomware attack. Thanks to the duplication, the data is not (completely) lost, but can be restored. This is intended to ensure the continuation of the business activities - keyword Disaster Recovery. During the backup, a copy of the data at time x is created and regularly overwritten.

Archiving always considers a longer time horizon. It is about the tamper-proof, immutable, and long-term storage of important data. These are usually not copied, but are permanently moved to an archive storage. The data thus migrates from the primary memory to a (cheaper) secondary memory, but can be reproduced or read at any time. The WORM storage (Write Once Read Many) represents a special case of archiving with which the immutability of the archive data is guaranteed. This is required by law in many countries for tax-relevant business documents or certain data in regulated industries (e.g. healthcare, pharmaceuticals, energy supply).

The aim of archiving is to minimize risk by fulfilling certain requirements, whether legal regulations, industry-specific regulations, or company-internal compliance requirements. Defined retention periods regulate how long the archive data must or should be stored. Archiving ensures that important company data is also available in the future - for example, when audits are due.

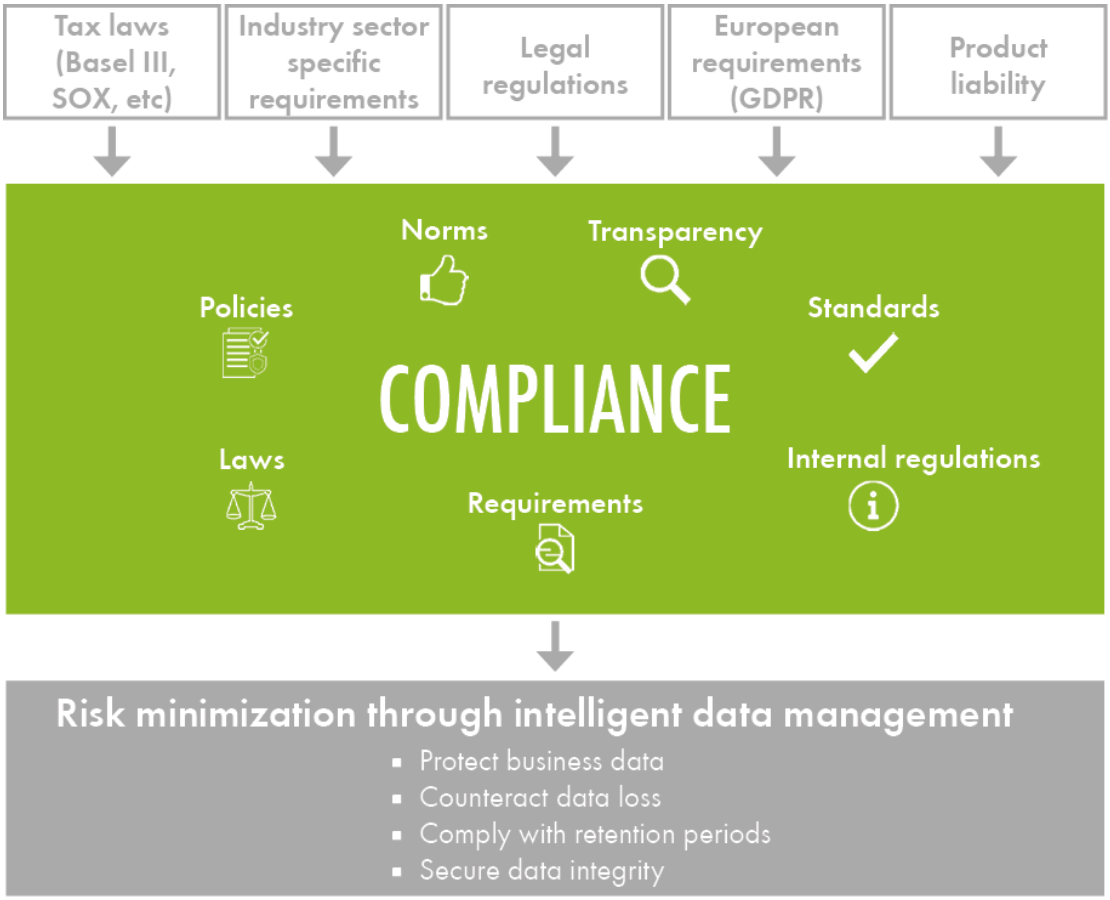

Image: Compliance Requirements and Data Management

The documents in an archive must be stored in their original state, while access and change attempts must be logged exactly. This ensures not only the confidentiality, immutability, and integrity of the data, but also that it can be restored to its original state. In today's IT world, archiving no longer has anything to do with dusty filing cabinets, but has seen an enormous development in recent years.

	Archiving	Backup
Time Horizon	Long-term data storage	Short/mid-term data storage
What happens to the data?	Data is permanently moved in its original state with its metadata	Data is copied and overwritten regularly
Objectives	▪ Compliance with legal requirements and retention periods ▪ Implementation of company-internal and industry-specific regulations ▪ Recovery of certain data (deleted from the original location) ▪ Read access without changing the archive data ▪ Ensure data integrity, tamper resistance, manipulation security ▪ Risk minimization	▪ Restoring a backed-up state ▪ Continuation of business in case of emergency (natural disaster, theft, ransomware attack, ...) ▪ Avoidance/prevention of data loss ▪ Disaster recovery ▪ Business continuity
Applications & Industries	▪ Regulated industries (e.g. healthcare, finance, automotive, aviation, pharmaceuticals, public administration, ...) ▪ Product liability ▪ Archiving is generally required in certain areas (e.g. archiving of tax-relevant documents) ▪ In part strongly country-dependent	▪ Depending on the risk and the structure of the IT infrastructure ▪ Important for nearly all organizations
Requirements	▪ GDPR ▪ SEC 17a-4 ▪ SOX ▪ GoBD (comparable regulations in other countries, e.g. GeBüV in Switzerland) ▪ Basel III ▪ HIPAA ▪ Product liability ▪ Compliance ▪ Internal specifications ▪ Audits ▪ ...	▪ Based on the company's own risk assessment
Storage Types	Onsite, Hybrid, Object, Cloud	Onsite, Hybrid, Object, Cloud

Table: Comparison and Overview: Archiving and Backup

3. Use Cases and Objectives

The use cases for creating **backups** can be designed very individually, since backups depend primarily on an organization's own risk assessment. The following use cases are the most common ones:

- Backups as a central component of a disaster recovery strategy
- Recovery of manipulated, damaged, or completely destroyed data
- Avoiding data loss
- Ensuring and maintaining business continuity
- Protection of digitally stored data

Archiving is based on numerous internal and external specifications, and these vary according to country, industry, or company size - so it is more difficult to define generally valid use cases. On the basis of various user reports, we would like to provide an insight into the most diverse application scenarios and requirement profiles of modern archiving solutions:

Retention of Tax-Relevant Accounting Data for Compliance with Legal Requirements

When converting to a virtualized IT infrastructure, the DAV (Deutscher Apotheker Verlag) integrated its long-term archive into this concept. The compliance with legal requirements (protection against data manipulation, immutability through WORM storage, ...) for the archiving of all accounting data was in the foreground.

Read the complete case study here.

Central Archive for Imaging Data and Other Departments/Applications in Hospitals

In 2008, the University hospital Frankfurt (Klinikum der Goethe-Universität Frankfurt, KGU) converted its archive to a software-defined solution. The aim was to set up a central archive both for the imaging procedures in the hospital and for other applications and departments (ECM, administration, etc.). The changeover laid the foundation for the introduction of the digital patient file system at KGU.

Read the complete case study here.

Product Liability and SAP Archiving

Safety is the top priority in the aviation industry. Strict regulations, long retention periods, and internal compliance requirements were the reason for the manufacturer FACC to search for an efficient solution for archiving important company data. The construction and development documents are subject to stricter obligations regarding burden of proof, with retention periods of sometimes more than 30 years. Today, FACC archives these data and SAP data in a tamper-proof central archive.

Read the complete case study here.

Digitization of Business Processes

Paperless processes and the fulfilment of legal/internal requirements - for the medium-sized company Möhling this was only conceivable on the basis of the existing IT infrastructure. The challenge in the search for a suitable solution was therefore to integrate an archive into the hardware infrastructure and to interact smoothly with the existing document management system. For Marc Eicker, Head of IT at Möhling, the topic of archives is „very productive, as it can streamline and digitize many processes".

Read the complete case study here.

Managing Data Growth and Rapid Technological Development

At the Karlsruhe City Hospital, data volumes are growing rapidly, in particular as a result of radiological imaging procedures. The tamper-proof archiving of these, and other data which must be retained, places the highest demands on the performance and scalability of the data storage. With its new archive software solution, the hospital is prepared for the data explosion, and can scale easily and flexibly.

Read the complete case study here.

4. Not Backup OR Archiving

The listed use cases paint a very broad and mixed portrait of the use of an archiving solution. Especially in highly regulated industries (such as healthcare, finance, automotive, aviation, pharmaceuticals, etc.) archiving plays an important role in risk minimization and traceability. With the EU GDPR, the topic has additionally gained importance across industries, as many data protection requirements can be more easily implemented on the basis of a central archive with retention management.

Ultimately, it is not a question of „archiving or backup", because the two concepts are not mutually exclusive, but complement each other. Of course, some companies can do without an additional backup solution by redundantly mirroring their archive across multiple locations. However, this only makes sense in certain cases and should be fully examined.

Instead, companies should be clear about what their data management goals are and what results they have in mind. The combination of backup and long-term archive makes sense for most companies in order to secure the data in the short term, and also to guarantee the integrity and immutability of the particularly relevant data in the long term. When selecting the appropriate solution, various factors and questions should definitely be taken into account:

- Is the solution scalable to withstand future data growth?
- Is there a dependency on certain manufacturers or hardware?
- Is it easy to migrate data, e.g. when business applications or storage infrastructure change?
- Can the solution be integrated into the existing IT infrastructure?
- Is the solution sustainable and supports e.g. cloud and object storage?
- Are data protection, compliance, and legal requirements met?
- Has the solution been tested/certified by independent auditors?
- Are the costs transparent and the associated investments in the IT infrastructure sustainable?

5. Modern Data Storage with the Software-Defined Archiving Approach

In the last years there has been some real progress in the market for archiving solutions. While companies have often relied on dedicated storage systems for the tamper-proof archiving of their data to date, a rethink has been taking place for some years now. The focus of modern archiving solutions is on flexibility, independence, and scalability.

The Software-Defined Archiving (SDA) approach is based precisely on these parameters. With SDA, a software solution delivers the archive intelligence, not the storage hardware. The archiving software thus connects the applications in the company (ECM, DMS, ERP, E-Mail, PACS, ...) and the storage infrastructure - and is thereby independent from both sides. As a central platform, the archive software takes care of data integrity, WORM storage, encryption, and retention management.

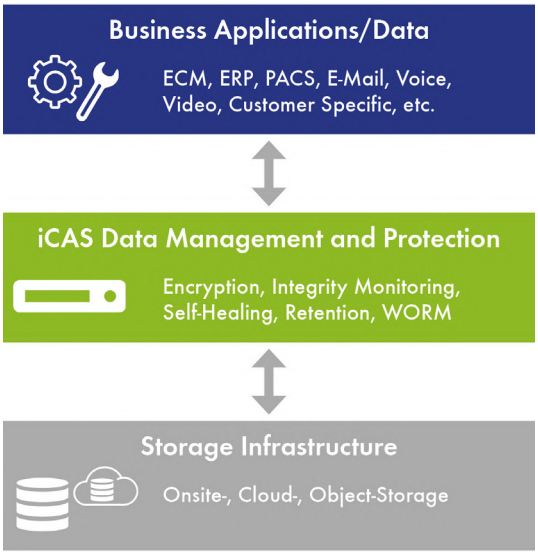

Image: Simple Architecture of the Software-Defined Archiving solution iCAS

Using the software-defined archiving approach, a central archive can be developed which builds on the existing infrastructure (e.g. standard x86 servers) of an organization - hardware-independent, flexible, and without additional silos. Since software solutions are much easier and faster to adapt to new requirements than hardware appliances, they allow long-term compliance with new internal regulations and changing legal requirements.

Independence from storage technology brings several advantages:

- No hardware lock-in for specific platforms
- Free choice of storage vendors and technology
- Archiving functionalities are decoupled from the hardware
- No technical restrictions with regard to specific protocols or APIs
- Unlimited scalability due to flexible licensing depending on actual requirements
- Investment protection and low TCO

Features such as WORM storage, self-healing, and encryption ensure the lasting integrity and protection of business data. SDA enables you to build a long-term, secure archiving strategy and to optimize your IT infrastructure. The concept thus overhauls the image of the archive as a „dusty filing cabinet".

6. Conclusion

Archiving and backup have become indispensable in today's IT world. Both concepts help companies to manage and secure their data. Organizations are well advised to consider the difference between the two concepts when defining their objectives and expectations, and to take the right action: Over what time horizon should data be secured? For what purpose? Based on what specifications or assumptions? What could the requirements look like in 10 or 30 years?

There is no shortage of modern tools and solutions to achieve these goals today. The era of archive silos is over - which the Software-Defined Archiving approach impressively proves. Organizations should recognize this when optimizing their data management strategy, and so focus on future-proof and long-term solutions.

7. Further Information

- Find out in various reference stories how companies from all industries benefit from Software-Defined Archiving.
- A central archiving platform as basis for GDPR compliance:
  How to meet the GDPR requirements with iTernity iCAS
- Compliance and integrity for SAP archive data:
  How to protect your SAP documents and data in the long term

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