# THE DATA WHISPERER

**ENERGY TRANSFER**

**Deloitte Consulting** is streamlining application environments with JiVS IMP, setting the gold standard for legally secure, efficient, low-risk and strategic IT – and driving dramatic cost savings. The promise of IT is real – over one hundred decommissioned systems, millions in cost savings in under two years, and a tenth of the effort to implement SAP S/4HANA. This is just one example from a customer in the energy sector.

## Executive Summary

80% of the corporate IT budget is spent on operations. Of this, the upkeep and maintenance of legacy systems accounts for around 70%. All for just one reason – the data and documents in these systems are subject to legal retention periods that stipulate they remain unaltered. This means that legacy information is effectively hardwired to its respective applications and systems (Chapter 1).

With no idea how to separate one from the other, enterprises have no choice but to invest considerable financial and human resources to keep systems running.  At the same time, companies are exposing themselves to numerous risks, not least a lack of adequate protection of personal data and intellectual property (chapter 2).

This inextricable link between a system and its data also disrupts, or at the very least slows down, agile business scenarios such as mergers and acquisitions. This extends across everything from compliance and rightsizing of production systems through to migrations to new product generations such as SAP S/4HANA, as well as optimizing data quality in preparation for digital business processes and models (chapter 3).

For the main part, these problems only come to light during the project itself, often at an advanced stage, by which point a solution is too difficult and expensive to realize. The only way to avoid these challenges is to extract legacy information from the system unchanged, and manage the data in a legally compliant way for the remainder of the lifecycle. With this alternative approach in mind, Deloitte Consulting developed a three-point framework and methodology that optimizes people, processes and technologies – and puts these principles into practice (Chapter 4).

The perfect partner to this methodology is JiVS IMP, the Java-based information management platform from Swiss provider Data Migration International (DMI). The platform ticks all of the functional boxes in the Deloitte Consulting framework It massively reduces the effort involved in managing the legacy information lifecycle, minimizes the risks to the enterprise, and supports and accelerates agile business scenarios (Chapter 5).

These benefits are a reality – as one example from the energy sector shows: over one hundred decommissioned systems, millions in cost savings in under two years, and a tenth of the effort to implement SAP S/4HANA (Chapter 6).

Thanks to JiVS IMP, Deloitte Consulting is streamlining application environments, driving massive cost savings through system decommissioning, and enabling the management of legacy information across the entire lifecycle – independent of legacy systems. In this way, the consulting firm is setting the gold standard for an IT landscape that is legally secure, efficient, low-risk and strategic.

1. Legacy information: Every new beginning starts with an ending

When you think about legacy data and documents, the first word that springs to mind is archiving. For many of us, this conjures up an image of a bleak room fit to burst with ageing files that seldom, if ever, see the light of day – all of this meticulously maintained by a lone, increasingly greying, archivist. Few employees are aware that this reclusive figure, or the archive, even exist. In this way, the archivist becomes a solitary hero – the long-term memory of the enterprise, keeper of secrets and treasures, and always there when things get serious. For example:

- When a legal dispute threatens;
- When sensitive information needs to be kept safe from prying eyes;
- When documents from a corporate acquisition have to be organized and archived;
- When closing a major contract depends on customers seeing decades-old construction blueprints or maintenance reports;
- When a tax auditor wants to view records for a transaction dating back many years;
- When designers or developers need the expertise of their predecessors, or past customer behavior, to help with a complex problem or difficult decision – and determine how to develop a product for maximum market success;
- When analysis of past customer behavior is needed to support predictions on future behavior patterns and, where necessary, adaptations of the offering and business model.

In these rare but very varied cases, CFOs are reminded why they approve such exorbitant archiving budgets every year.

Of course, the digital age has put the days of paper archiving far behind us, at least for the main part, particularly in large enterprises. Yet, the general impression remains the same: the costs are too high and the value questionable, except in the most serious cases.

This is because the situation in most IT departments today is not dissimilar to the days of paper archiving – if not a whole lot more chaotic. There's no central archive and no archivist to keep an overview of the long-term memory of the company. Legacy data and documents are scattered across a variety of systems, to which they are effectively 'hardwired', because the data takes on the same predefined structure of the source system. This inextricable link remains even when the data is archived, as these use the same vendor-specific formats, which are technically integrated with the applications of the relevant provider.

The resulting risks to the enterprise are far greater than they ever were during the days of paper archiving.

2. Unmanaged legacy information creates risk

This includes the risk of data breaches, as well as the loss of data and associated intellectual property. With companies obliged to keep information for longer than just a few years, more like several decades, the maintenance period for these systems inevitably expires – for both the software and hardware. Security updates are no longer available, increasing the risk of data theft. Outdated hardware leads to an increased risk of system failure and, even if the components have been stockpiled, this failure can result in partial and sometimes irreparable data loss. The same goes for archived information, saved on storage media from different product generations. This includes magnetic tape on which mainframe data is stored, for example.

Wherever possible, firms try to contain these risks by enclosing legacy systems in a kind of virtual machine, installing modern hardware and only booting systems in the rare case that a serious situation demands it. At the same time, companies cut ties to these frozen systems, in order to isolate any security issues that have arisen over time and have not yet been resolved. However, this means that access to legacy information is restricted to emergencies or exceptional circumstances. As a result, the benefit to the business is next to none.

Despite these efforts, some major risks are unavoidable. This is because firms struggle to administer their legacy information inventories in line with lifecycle management. Is it really necessary to keep all of the legacy data and documents? For the same period of time? Is it okay to delete the entire archive, when we only need to remove a single data record?

Since the EU's General Data Protection Regulation (EU GDPR) came into force, these questions are no longer relevant. Companies now need to know exactly what personal data they hold, regardless of age and location. They also have to be able to anonymize and encrypt this data. Furthermore – and this is critical – they must be able to completely erase information, with surgical precision, at the level of individual documents or data records. Finally, companies must fulfil their obligation to fully document the entire lifecycle of personal information. The same regulations, with slight differences, feature in the latest Californian data protection law, the California Consumer Privacy Act (CCPA). Both sets of rules have the potential to set a global standard for the protection of personal data.

Corporate IT environments are large and diverse. Particularly in large enterprises, there are hundreds of applications and systems from multiple providers and releases, in both productive operation and stealth mode, that exist in order to comply with different legal retention periods and rules. In light of this situation, 50% of large enterprises expect to be able to decommission half of their legacy systems - and see this not only as an opportunity but a necessity.

Legacy systems are a major reason why around 80% of the entire IT budget is swallowed up by operations. This has a significant impact on enterprise innovation. Instead of investing in the latest software generations and building up new digital knowhow, companies have to maintain expertise in the various legacy systems, either by buying this in or passing it down internally. New software that could secure the company's digital future is implemented slowly or much later than necessary. In addition, a disparate landscape of legacy systems and archives significantly hinders access to historical information and intellectual property – negatively impacting their usefulness and potential value.

## 3. Unmanaged legacy information slows down agile business scenarios

This situation is not just a result of the technical aging process of the acquired systems, or the purchase of new product generations and changes to legal conditions. More often than not, agile business strategies play a central role.

### 3.1. Mergers & acquisitions

Company acquisitions are a cause for celebration – at least for management. No sooner is the ink dry on the contract, the real work for IT begins. This is because buyers not only acquire new markets, employees and customers – they also get IT systems too. And in a large firm, these can easily run into the hundreds.

After a merger or acquisition, it makes no economic sense to continue running the acquired legacy systems. But shutting them down is also not an option, as they hold valuable data and documents that could translate into real money for the buyer. In addition, legacy information is subject to diverse retention periods and requirements. The information has to be stored for many years, sometimes decades, and be easily accessible when needed.

This is why acquisitions always result in complex integration and migration projects for IT. Decisions have to be made as to which applications should be transferred from the new company and which are no longer needed. This is closely linked to the question of which data and documents should be migrated to the live systems.

## 3.2. Compliance management

Since the deadline of 25 May 2018, the hype around the GDPR has quietened down, although perhaps only in the public eye. The exception to this is when organizations are singled out for fines – penalties that are becoming increasingly severe. Since the launch of the CCPA in early 2020, and the end of the grace period in August 2020, this situation also applies increasingly to US firms without customers in the EU. As a result, the GDPR and CCPA have become almost daily talking points in IT departments around the world – and this with good reason – as these data protection laws have turned standard data storage practices on their head. In the past, the main focus was on storing data and documents for as long and as securely as possible. Now, both regulations demand that companies delete any information that contains personal data.

The obligation to comply with this mandate comes into force when employees, customers or partners exert their "right to be forgotten" – providing no other rules state otherwise, such as legal retention periods. Firms are also responsible for deleting personal data when it becomes clear it was obtained unlawfully, or when the reasons for collecting the data are no longer valid. In essence, the GDPR not only creates the need for a comprehensive delete functionality. It also demands continuous management of the entire lifecycle of personal information. Despite differences in the detail, this is also true for the CCPA. In other words, both regulations demand consistent retention management.

It's hard enough fulfilling these requirements in live systems. And when it comes to legacy systems, not all organizations are aware that the rules of GDPR and CCPA still apply – unequivocally and without exception – no matter how old these systems might be.

The fundamental issue with retention management in legacy systems is that it's impossible to manage the lifecycle of data and documents that contain personal data independently of the system lifecycle.

And as complete management of many legacy systems is unfeasible due to technical reasons, this not only leads to a disproportionate rise in costs, but also in legal risks. Again, the GDPR and CCPA make no distinction between production systems and legacy systems.

## 3.3. Rightsizing of production environments

ERP systems have a tendency to grow quickly. Even after a short time, companies often have to expand their storage capacity and computing resources. This scenario repeats over and over, as companies try to ensure that the demands business users put on the system don't adversely affect performance. In some cases, this even means purchasing more licenses. Operations and maintenance become ever more complex and costly. Updates and upgrades take more and more time. And overtime and weekend work become the norm – all to ensure the minimal disruption to day-to-day business and production.

For example, if ERP administrators want to half the volume of a 10 TB database, they would generally look for ways to extract and archive the data and documents that are no longer needed. Having found a potential solution, unexpected difficulties often arise, including complex interdependencies that can prevent any reduction of storage capacity by 50% or more.

An equally common approach is to implement a new ERP system alongside the old one, working with the new solution, while continuing to run the legacy system – albeit with less resources. At the end of the day, this is the only way to ensure legally required access to the data and documents

From a strategic point of view, both of these approaches fall short. Either it's impossible to reduce the data volume to the desired level in the live system, or else the number of systems just keep on rising. In either case, the demand on resources goes up excessively, both in terms of financial and human resources. Upgrades and security updates take longer to perform. Downtime across the entire system, or parts of it, disrupt or slow down business processes, even when the system is running.

## 3.4. Transformation and migration to SAP S/4HANA

In 2027 – or 2030 for customers with extended maintenance – SAP will terminate support for all previous versions of SAP S/4HANA. For most of SAP's existing customers, this represents a mammoth project – not just a simple upgrade but rather a whole new implementation. In terms of the complexity and time required for the project, the most significant challenge is the migration of the existing data and documents into the new IT environment.

When disparate legacy systems from multiple providers are transferred to a modern centralized solution, data migration projects are inevitable. For large enterprises, the effort involved can quickly add up to more than 5,000 person days.

The higher the quality of data, and the lower the quantity, the greater the benefit of data migration. Duplicate data and incomplete, or faulty, records – from business units long since sold or closed down, for example – already take up too much storage space and maintenance effort in the legacy systems. The value-added potential of a new centralized solution is significantly diminished if these past ills are brought over to the new world.

SAP is also mindful of the challenge that historical data and documents present in the transformation to an "Intelligent Enterprise". As part of its strategic SAP Movement program to accelerate implementation of SAP S/4HANA and SAP C/4HANA, the Walldorf-based company recommends addressing this challenge from the outset by adopting an intelligent and selective approach to the migration of historical information.

Customers with large SAP installations with several terabytes of data, who are planning to migrate to the new software generation or have already started the transition, quickly find themselves facing an enormous investment in financial and human resources. On top of this comes a potentially sizeable investment in new infrastructure as a result of the SAP S/4HANA implementation. Main Memory is expensive, so the bigger the SAP HANA database, the higher the costs.

The migration of existing databases to SAP S/4HANA or SAP C/4HANA also calls for their transformation, because the database structures are different. This risks potential problems with internal and external audits. After all, who can guarantee that all data remains unchanged during the migration? Precisely for this reason, it's not easy to shut down SAP systems during a migration to SAP S/4HANA, at least not until the diverse retention periods and requirements have been met.

Transformation and migration to SAP S/4HANA doesn't make business sense if legacy systems keep running in parallel, while data and documents are transferred to the new environment. After all, the continued operation of legacy systems is one of the key reasons why around 80% of the corporate IT budget is spent solely on operations. 70% of this alone is swallowed up by legacy systems. A more ideal split would be 60% for IT operations and 40% for innovation – and this on a permanent basis.

## 3.5. Optimization of data quality

Poor data quality post-migration is an equally significant hurdle. Digitalization lives and breathes data. And when that data is wrong, highly automated processes between human and machine, and interaction between the machines themselves, only function to a limited extent and are prone to error. Data analysis in defective databases leads to false insights that could have serious consequences for the ongoing development of business models. This jeopardizes a company's transformation into an intelligent enterprise.

The digital economy only works when the data is right. And data quality is one of the essential prerequisites for successful digital transformation in traditional companies. Banking and insurance is a fitting example. On the one hand, these firms go through a strong consolidation phase. On the other, they are challenged to the core of their business by diverse digital startups. Future success and the path to digitalization is therefore largely dependent on overall data quality and, in particular, the quality and consolidation of customer master data.

This also applies to other similar sectors such as energy and manufacturing. As an example, Tesla speaks for itself. Far from being a traditional car manufacturer, Tesla is more of an IT company that builds driving computers. First in line in the company's value-added is software and data, out in front of classic engineering expertise. This realignment of priorities in favor of digital value is the future for all sectors and industries.

The current reality in many enterprises is: one customer, multiple data records – a situation that has evolved almost inevitably. A customer calls to report a problem and his data is recorded in a system. On another occasion he makes a complaint, and his data is recorded for a second time. Unfortunately, the employee responsible makes a mistake with the customer's name. In his third contact with the company, the customer orders a product, but in the meantime has a new address. As he can't be found in the system under the new address, the sale creates a new data record. Suddenly, there are not only three data records for the same person – but also three separate ones. Naturally, the company assumes that it's dealing with three distinct customers. And when it comes to data analysis, no link can be established between them.

If you take into account the various archives and legacy systems that rarely or never feature in day-to-day business, it quickly becomes clear that this phenomenon pervades a company's entire history. For established firms in traditional sectors, however, this could represent their greatest asset in the race to the digital future. In terms of future value, legacy information holds a treasure trove of intellectual property and a history of customer relations that spans generations – something that newcomers or challengers in the sector can only dream of. But this treasure is hard to find when it's buried deep in a pile of data garbage.

Manual duplication of work is not the only issue resulting from poor data quality and redundant master data. The greatest challenge firms face on their route to the digital future lies in their ability to analyze data in detail and generate insights that help them optimize new digital processes, services and business models.

Without an accurate overview of purchase history, it's difficult to provide customers with appropriate offers and the right level of personalization. Customers also expect businesses to know them, no matter which channel or location they use to interact with the company. And that too is only possible, if the master data is accurate and up to date.

To enable end-to-end customer visibility, enterprises need complete master data records. To achieve this, companies need to enrich customer data and correctly assign information. This could include information on liquidity, purchases, turnover, location, and customer category – to name but a few. Only when companies are able to analyze their customer information, along with other relevant data, across the entire history of their various systems can the vision of a digital intelligent enterprise become a reality.

4.    Deloitte Consulting: A framework for data governance

"All of these scenarios are strategic in nature and happen in every large enterprise, often all at once," stresses Ankur Gupta, Senior Manager, MBA PMP, Operations Transformation, Core Business Operations at Deloitte Consulting. "And all are difficult, if not impossible, to solve without a disproportionately large investment in financial and human resources. All of these scenarios have one thing in common, which is also the root cause of their issues – the problem of legacy information."

But because legacy information in the vast majority of companies lies dormant in archives or frozen legacy systems, most IT departments first stumble across the issue at an advanced stage of the project. By this time, any attempts to counter the problem are far from optimal.

"On behalf of our customers, we have learned two vital lessons," explains Ankur Gupta. "Firstly, lifecycle management of legacy information must be seen as part and parcel of the IT strategy. Secondly, it makes more sense from a technical, economic and strategic point of view to prioritize and overcome these challenges at the outset of important IT initiatives – or even independently." To this end, Deloitte Consulting developed an ideal-typical framework for archiving. This gold standard in the lifecycle management of legacy information lays the foundations for the legally secure, efficient and strategic

IT of the future. Ankur Gupta elaborates: "Our preferred partner in this endeavor is Swiss provider Data Migration International with its Java-based, system-independent platform for information management, JiVS IMP."

Deloitte Consulting customers that follow this advice, tackling lifecycle management of legacy information at the earliest possible opportunity, report numerous benefits. Just some of these include:

| |
|---|
| Identifying the data which is getting archived, early, helps plan for **what needs to be brought over to the future state solution** (e.g. SAP). |
| Gives organizations appropriate time to create or review their **Records Retention** policy and engage with the right stakeholders such as Tax, Audit, Legal early during the process to reduce risk. |
| Gives organizations enough time to create a **Data Governance plan** and setup sub-committees including Tax, Audit, RM etc.. |
| Early planning helps **classify data** (analytics, audit, research etc.) based on future needs and helps **plan storage solutioning** accordingly (for example Archive Solution or Data Lake etc.). |
| **Early go-lives of historic data archive** help get feedback from business users and **avoids any surprises** during go-lives. |
| These mock go-lives also give business users a chance to become familiar with the archive, ensuring a **smooth SAP go-live transition**. |
| Starting early might also give a chance to clean-up and bring data from **other legacy systems** as well, realizing the idea of a **centralized repository.** |

Illustration 1: Benefits of legacy information lifecycle management

These benefits are the result of a perfect balance between people, processes and technology. This not only hinges on a well-defined governance plan. It also requires the active engagement of all legacy information management stakeholders in the plan's development and implementation. And the right technology platform is also critical to enables the complete and unbroken management of the entire lifecycle of legacy information – independent of its original storage system (see illustration 2).

| GOVERNANCE PLAN | STAKEHOLDERS | RIGHT PLATFORM |
|---|---|---|
| With enterprise data growing rapidly and with business and regulatory demands requiring continuous data access, organization must have a **well-thought-out approach** for keeping years of history online. | Create/review their **Record Retention** policy and engage with the right stakeholders such as **Tax, Audit, Legal** early during the process to reduce risk and understand requirements. | Select a platform that **expedites delivery**, saves costs and enables **easy access to data** for the stakeholders; avoid custom reporting and extensive development. |

Illustration 2: The perfect interplay of people, processes and technology

Particularly important to the technical and functional properties of this platform is specific support of areas such as long-term archiving and the decommissioning of legacy systems and applications, as well as the management and application of legal retention periods and rules. Platforms also have to be capable of scaling seamlessly and driving the same consistently high performance, regardless of increasing volumes of data and documents. After all, this is the foundation and prerequisite for user satisfaction and acceptance. This becomes even more important when you consider the exponential growth of information in the digital economy. Only when a technology platform is capable of achieving all this can companies hope to reduce risks and support agile business scenarios.
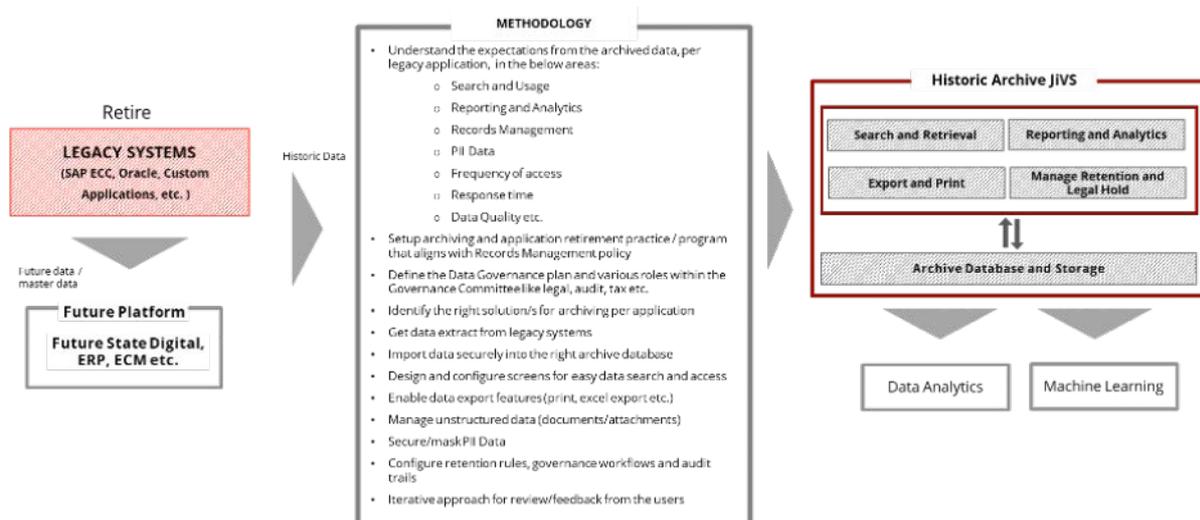
Illustration 3: Methodology meets technology – system retirement and information management with JiVS IMP

At the heart of everything lies the retirement of legacy systems. This involves migrating all of the legacy information – both data and documents – to a neutral centralized platform and saving this data in a modern format. This is far from a traditional archiving process. There are no tax auditors or business experts poring over fields and tables, or hunting for invoices, pay slips and product plans. Instead, the information has to be saved along with its business context and, where required, also encrypted. This approach is called historization (see illustration 3).

This type of platform offers as standard a variety of interfaces to legacy systems from diverse providers such as Baan, Microsoft Axapta, Oracle ERP, PeopleSoft, and of course SAP. Every single instance of information from the legacy systems are captured and migrated, and every step fully documented. Specific data and documents can be deleted at the level of individual data records. And permissions can be clearly defined. It goes without saying that a platform like more than satisfies an auditor's requirements.

## 5. JiVS IMP: Data governance platform

JiVS IMP from Data Migration International is a perfect example of a modern centralized Information Management Platform that manages both data and documents across the entire lifecycle of historical information. The platform historicizes information from legacy systems, managing the entire lifecycle in line with internal and external regulations such as the EU GDPR. And it does this from the point of transfer out of the legacy systems through to the final documented solution. Sensitive data can be stored in an encrypted format.

JiVS IMP provides full and easy access to historical information – to a level that would have been almost impossible to achieve in a heterogenous IT environment. As such, the platform establishes a seamless link between the world of experience and operational data – the so-called X and O data so highly touted by analyst firms – and the world of historical data, otherwise known as H data.

Thanks to over 2,000 supported business objects from enterprise solutions – over 1,200 in the case of SAP systems – 100% of H data and documents can be transferred from legacy systems to JiVS IMP at the push of a button – usually without any prior project-specific effort.

In application retirement projects, JiVS IMP acts as a central meeting point and data staging area for enterprise information. The platform analyzes both data and data quality, driving optimization through processes such as data enrichment and harmonization. JiVS IMP ensures legally secure access to information, on any device, at any time and anywhere. The platform subjects the entire inventory of legacy information to continuous retention management, driving comprehensive management of the lifecycle of historical data and documents. The business-object-oriented approach of JiVS IMP also enables optional integration of the platform into modern environments such as SAP S/4HANA or SAP C/4HANA.

Enterprises can implement JiVS IMP in their own data center or use Cloud-based offerings for implementation and deployment. Environments supported include Amazon Web Services, Google Cloud Platform and Microsoft Azure. At the same time, customers can choose from a variety of common database management systems, including IBM Db2, Oracle Database, Microsoft SQL Server and SAP IQ.

After legacy information has been historicized by JiVS IMP, companies can calmly and confidently pull the plug on that system forever. Alongside legal security and compliance, the platform drives operational savings of up to 80%, when compared with the cost of operations for the decommissioned systems.

Replacing dozens of systems with a single centralized platform eases information governance, which ensures the systematic management of enterprise information. This improves the quality of information. Since all access to historical information is controlled by strict authorization management, and also fully documented, enterprises are always prepared when it comes to internal and external audits. Last but not least, this also increases data security, as a modern centralized platform is much easier to protect against security gaps and cyber-attacks than outdated heterogenous legacy systems.

Enterprises that use JiVS IMP during the transition to a new software generation not only free up investment resources. They can also be sure that nothing more than the selected data is transferred to the new environment, hence scaling the new systems more efficiently. This is thanks to functionality in JiVS IMP that enables a reduction potential analysis on the information inventory. The platform also defines filter criteria for data transfer and prepares information in a neutral format for the final transformation und migration.

If reduction potential is identified, in the case of SAP systems for example, historicized data and documents are removed from the online database via the SAP application layer – as with ADK archives. But in contrast to ADK, the historicized information isn't saved in a proprietary format on a third-party archiving system. Instead, the information is stored in an open format on JiVS IMP itself. This guarantees 100% access independent of the source system.

JiVS IMP doesn't use the ArchiveLink interface to transfer legacy information, instead going via the SAP Audit Information System (AIS), without creating a shadow index. The advantage of this approach is that, unlike ADK, historicized information is not deposited on the platform as a single file, encompassing thousands upon thousands of documents. With JiVS IMP, data and documents can be saved individually and thanks to in-built retention management, managed and administered across the entire lifecycle. Finally, the data and documents can be targeted for deletion at the level of individual data entries and instances. This works in the same way for the transfer of content from existing ADK archives. As with the online database, the JiVS IMP ADK converter is used to transfer the information to the platform as data sets.

JiVS IMP also simplifies and accelerates other key business scenarios, including mergers and acquisitions, sales and spin-offs of business units, and the optimization of data quality, particularly in the case of big data.

What's more, thanks to the decommissioning of systems by JiVS IMP, companies can harmonize, consolidate and centralize application landscapes from a variety of providers – even entire data centers. Along with data quality optimization, these are the ideal prerequisites for a generational change in the system and application environment, such as a transition to SAP S/4HANA or SAP C/4HANA.

JiVS IMP not only saves costs. It also delivers substantial added value in the form of greater agility, flexibility, legal security and speed of innovation. Using JiVS IMP, enterprises can exploit the value-added potential of their historical information, or H data, more easily, quickly and comprehensively than ever before – driving up the value of their organization.

Furthermore, the platform's functionalities are available as a subscription-based service. In this way, costs shift from capital expenditure (CAPEX) to operational expenditure (OPEX).

## 6.  Customer example from the energy sector

A recent customer example from the energy sector provides ample proof that the Deloitte Consulting and JiVS IMP partnership translates into real and tangible benefits.

The company in question has grown over time, both organically and as a result of mergers and acquisitions. Its heterogenous IT landscape features hundreds of applications and multiple terabytes of data from an array of different system and application generations. To support ongoing legal proceedings, the company needs to be able to access historical data records, some of these decades old. And on top of this, they are planning a migration to the latest ERP generation SAP S/4HANA. All of this is typical for a global business in the energy industry. Just as characteristic is the level of financial and human resources required to maintain this landscape, along with the lack of flexibility to support corporate growth or the modernization of the application landscape, without significant additional costs.

The reasons why this scenario is so typical lie firstly in the complexity of such a large diverse application and system landscape. Secondly, the legal requirements for the storage of legacy information prevent system retirement, or at least until a legally compliant solution can be found to manage the legacy data and documents, and provide an alternative to the current legacy systems. Ultimately this situation impedes modernization efforts and efficiency, as it absorbs a disproportionately high percentage of available financial and human resources.

The opposite of complexity is simplicity; of heterogeneity – homogeneity; of inefficient resource usage or, more simply put, waste – rationalization. "It wasn't just the customer's IT department that was intrigued by the idea of a simple, homogenous and streamlined application landscape. The company's legal department also showed great interest," reports Ankur Gupta. "The former for reasons of resource scarcity, the latter to lower legal risks. These distinct motives aptly demonstrate that while the issue of legacy information may need a technology solution, it can't be seen solely as a technology problem. On the contrary, the issue has to be overcome within the framework of a comprehensive governance approach that engages all stakeholders from the outset."

During legal disputes, the customer needs continuous access to legacy information, among this sales information that goes back over fifty years. The latter hails from the era of mainframe systems and was stored on backup tapes. This meant that the IT department had to create appropriate jobs to help convert the information on the tapes into a format that would be legible on modern devices. Luckily for the energy company, there was one employee on staff who still knew his way around mainframe formats and who, until recently, had worked for the firm for around 60 years.  But even his expertise couldn't change the fact that the specific data needed for the court proceedings couldn't be filtered out with enough precision. As a result, the law requires that all of the saved information be presented. Rather than delivering answers, this is more likely to raise new questions and prevent a speedy end to proceedings.

This targeted access to individual data entries is becoming more and more important across many scenarios. Even though the company's business is mainly in the USA, it also has customers in the European Union and is therefore subject to the requirements of the EU's General Data Protection Regulation. GDPR and CCPA both stipulate, under certain conditions, the anonymization, encryption and above all deletion of individual data records that contain personal information.

For IT, the focus was on the effort involved in the upkeep and maintenance of legacy systems, which had to be reduced. Fifteen employees alone were responsible for the administration of an extensive well-known reporting environment with around one hundred individual applications, which was due to be replaced by a simpler solution. Even still, only if the legacy environment could be decommissioned, would these administrators become available to take on other work in the future.

Costs and risks – the two fundamental problems associated with unmanaged legacy information. This was the motivation behind a 2018 evaluation project, initiated by the customer's IT department and colleagues from the legal department. The aim was to identify which legacy systems could be retired and develop an appropriate archiving strategy. Deloitte Consulting was selected as the consulting partner.

"We had a superb starting point," Ankur Gupta recalls. "Everyone involved had a common understanding of the leading role that lifecycle management of legacy information plays in strategic IT. Equally important was a shared awareness of the interplay between people, processes and technology. We call it the big three. And last but not least, we had the support of top management."

As all of the basic requirements were already in place, the rest of 2018 was taken up with the search for a suitable technology solution. In terms of processes and business scenarios, the solution had to support all of the areas in Deloitte's archiving framework (see illustration 4).



Illustration 4: The archiving framework from Deloitte Consulting – the gold standard for system decommissioning and the management of historical information

Comparing the different areas and scenarios with the functional scope of the various offerings is not only an advantage in terms of showing the business benefits of a comprehensive lifecycle management solution. The framework also encourages stakeholders to start small and focus on getting familiar with a selected subproject, before scaling the project and the corresponding technology solution. Against this backdrop, the scalability of the chosen solution was also a central evaluation criterion.

"JiVS IMP, the Java-based, system-independent information management platform from Data Migration International (DMI), scored on all points. We were impressed by the platform's retention management capabilities, as well as its integrated workflow for deletion of legacy information. DMI also had an elegant solution to retaining the data integrity and relationships of objects during and after the extraction of data and documents from the legacy systems. Alongside the key selling point of scalability, JiVS IMP impressed with a wide range of supported business objects from diverse providers and systems, as well as its easy access to legacy information."

Since the decision in favor of JiVS IMP in late 2019, the energy company has leveraged the platform and Deloitte Consulting's decommissioning concept multiple times. In the first instance, the mainframe legacy data from the backup tapes was migrated to JiVS IMP, after which the tapes could finally be destroyed. By July 2020, the reporting platform with around one hundred different applications had also been retired, after all of its data had been safely deposited in JiVS IMP.

"These were important first milestones that immediately showed the benefits of our approach and the JiVS IMP platform," stresses Ankur Gupta. "As we always had the trio of people, processes and technology in mind, we created a steering committee with stakeholders from IT and the different lines of business. In this way, we were able to quickly determine which systems and legacy data were eligible for retirement and migration to JiVS IMP. As well as this, we could tell very quickly which views of the legacy information would be needed after the systems were retired. With the platform's broad support of business objects, several views were already provided as standard. As a result, we were able to realize these project requirements in record time."

In both cases, the cost savings were immediate, particularly in the case of the decommissioned reporting platform. For one thing, the infrastructure of the platform was no longer needed. Beyond that, costly support contracts could be terminated and there was no need for software licenses to be renewed. "To reach our project goal as early as July 2020 was simply unbelievable, particularly considering the enormous complexity of the data formats. Amidst an extracted data volume of five terabytes, these were not at all easy to read," adds Ankur Gupta.

Both projects demonstrate how the combined approach of Deloitte Consulting und JiVS IMP lay the foundations for enterprise-wide lifecycle management of legacy information. This approach also featured in two further projects in 2020.

At the end of 2019, the energy firm acquired a new business. As is usual in this type of scenario, the firm also inherited the system and application environment of the new acquisition, complete with data center. Integrating this environment along with its infrastructure, while extracting, transforming and migrating data, meant a huge investment in time, finances and human resources. Thanks to Deloitte Consulting and JiVS IMP, this effort could be confined to the extraction of legacy information and its migration to the platform. As early as August 2020, data and documents from every one of around twenty applications, including systems from Oracle und Highland, had been transferred to JiVS IMP. As a result, all of the systems and applications, including the data center, could be decommissioned.

The company's second major project of 2019 was the implementation of SAP S/4HANA, which began around the same time as JiVS IMP was implemented. The greatest drain on costs and time in this type of project is the legally secure storage and migration of legacy information from the previous system, SAP ECC 6.0. The less data and documents that need to be transformed and migrated the better. And if the previous environment can be eliminated entirely, all the better. Usually, these two goals are mutually exclusive. However, thanks to Deloitte Consulting's approach and JiVS IMP, both goals were realized. The energy firm only migrated around five percent of its SAP legacy inventory to SAP S/4HANA. And this only comprised open transactions and master data. The rest was transferred to JiVS IMP, with the retirement of SAP ECC 6.0 following shortly thereafter. The implementation of the new SAP software generation, using a greenfield approach, was also completed in 2020.

"This is an exceptional result. Implementing SAP S/4HANA in the usual way would have meant a complete migration of the legacy inventory, taking eight to ten times longer – quite apart from the correspondingly high costs," explains Ankur Gupta. "What's more, the user experience of accessing legacy information in JiVS IMP is equally good, if not better than if the data had been transformed and migrated. Equally significant from a business perspective is how our approach and JiVS IMP minimize the risks associated with a SAP S/4HANA implementation."

Around 1,200 the energy company's employees have been trained as JiVS IMP users. As the views in JiVS IMP generally look the same as the original applications, the training effort was minimal. Users utilize a single centralized installation of the platform in the company's own internal data center. As a corporate group, the energy firm brings together diverse brands and business areas under one roof, purposefully upholding and reflecting the different cultures. All of these, however, benefit from enterprise-wide shared services, of which JiVS IMP is now a part. "I only have to open a screen and I

have everything that I need. And the the same positive feedback is coming from all of our stakeholders in the legal department, internal auditing and finance," Ankur Gupta reports.

Around thirty more applications, some from earlier acquisitions, are scheduled for retirement in 2021 – featuring up to 40 terabytes of data. "So far JiVS IMP has fulfilled all expectations for scalability and performance. This is testament to the platform's clever design and features, but also to the expertise of the specialists at Data Migration International, which our cooperation up to now so convincingly demonstrates," reiterates Ankur Gupta.

The results to date are certainly impressive. Savings to the end of 2020 alone amount to millions in cost savings , far exceeding the project costs These savings are not a one-off. The efficiencies continue, particularly when you consider how much would have been spent on licenses, infrastructure and personnel to satisfy retention periods spanning seven to ten years, and in some cases even longer.

In just two years, the enterprise has decommissioned over one hundred applications – including two SAP ECC instances, mainframe and reporting platforms, Oracle EBS, Infor EAM, and RightAngle, as well as a host of individual applications. And the list goes on – with diverse database platforms and formats such as Microsoft SQL, Oracle, IBM Db2, Flat Files and VSAM. Moreover, the productivity of the teams involved in managing legacy information has gone up by more than 20% - both during the project and in day-to-day operations. Even more significant is the fact that the Deloitte Consulting approach and JiVS IMP have improved the quality and reliability of legacy information dating back over fifty years. The energy company can now fulfil all compliance requirements reliably, thanks to clear processes for data governance, retention periods and rules, and lifecycle management of legacy information – all mapped and supported in JiVS IMP.

"Information is the new oil. This is as true in the digital economy as it is in energy companies. With clear responsibilities and processes, and JiVS IMP managing legacy information, our customer is perfectly prepared for the challenges ahead," comments Ankur Gupta. "Even in historical information, real treasure is hidden – worth its weight in gold in the future. Finding this treasure is a business scenario that we at Deloitte Consulting, with our partner Data Migration International, will no doubt pursue in the future."