WHITE PAPER

MACRO 4
A Division of UNICOM Global

Application Decommissioning

The practical alternative to legacy 'life support'

A guide to successful application decommissioning and how to choose the right approach for your business

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INTRODUCTION:

THE PROBLEMS OF LEGACY 'LIFE SUPPORT'

Almost every organization has at least one application on 'life support': an application that has outlived its useful purpose but is kept running because it holds valuable data.

While the application is considered redundant or legacy, the data cannot be discarded. It might be needed for operational reasons, such as interacting with customers. It might be required for compliance – perhaps to meet a statutory obligation to retain data for a number of years. Or it might be just too risky to lose: an irreplaceable source of historical information with the potential to deliver important business insights.

Whatever the reasons for keeping legacy applications on life support, the problems cannot be ignored. High running costs and support overheads hamper innovation. Access problems impact customer service. Security shortcomings increase business risk. For many organizations these issues are compounded because they have dozens – or even hundreds – of applications on life support around the business.

Application decommissioning offers a solution.

WHAT IS APPLICATION DECOMMISSIONING?

Application decommissioning is the process an organization can use to remove one or more applications from service, together with any supporting hardware and software, while keeping the data accessible to maintain business continuity.

An application decommissioning program relies on technology, in the form of an online repository for storing the data. Equally important, but often overlooked, are the steps needed to retain the right data, in the correct business context. This ensures that the data remains meaningful to business users long after the legacy application has gone.

THE BENEFITS OF APPLICATION DECOMMISSIONING

No two decommissioning projects are exactly the same. The drivers, solution and benefits will all vary according to the nature of the particular legacy application and the problems the organization needs to address.

Nevertheless there are three core benefits that any application decommissioning program should deliver:

- Direct savings through the elimination of legacy support and maintenance costs
- Efficiency gains by delivering easier access to historical business data
- Risk reduction by managing and accessing data in a secure and compliant manner

THE DRIVERS FOR APPLICATION DECOMMISSIONING

Applications regularly become redundant as a result of normal business and IT practices, such as:

- Mergers, acquisitions or organizational restructuring creating duplication
- A business division ceasing to operate, or being divested
- Old applications being replaced with more up-to-date alternatives
- Streamlining operations by consolidating multiple instances of the same application
- A move to the cloud

While the application itself may be surplus to requirements, some or all of the data created by the application will typically be needed by the business. It is rarely practical to move all of the historical data across to the new, 'live' replacement application, due to the negative impact on performance, additional costs, and technical difficulties associated with converting the data. If no alternative solution is found, the application will have to remain on 'life support' in order to keep the data accessible. Problems start to mount up and ultimately become powerful drivers for decommissioning.

BUSINESS RISK

Legacy applications can pose a serious threat to security. They may be incompatible with important security features such as multi-factor authentication, or only work with old or unsupported operating systems and databases, which are more vulnerable to attack. The IT skills required to maintain legacy systems are often in short supply. If available at all they will be costly. It is not uncommon for there to be no-one left in the organization who is familiar with the original application. This increases the risk of unacceptable delays if a system problem needs fixing. Or worse, it could reach the stage where a problem cannot be fixed, and access to the application is lost.

RISING COSTS

Keeping legacy applications running purely to view historical data is an expensive undertaking. Software and hardware maintenance charges, power consumption and data center occupancy add up to significant costs. In some instances, packaged software vendors will charge more for supporting older versions. The extra time needed to resolve problems with old and unfamiliar systems can also create disproportionately high support costs.

COMPLIANCE CONCERNS

Around the world there are rising concerns about data governance. Regulations such as the GDPR, CCPA, Sarbanes-Oxley and HIPAA have forced businesses to pay closer attention to the way they manage data and protect data privacy.

Older applications do not always provide the granular levels of security required to limit access to sensitive data, or allow data to be redacted.

Businesses must also balance the twin priorities of data minimization and compliance with long-term statutory retention periods. A legacy system usually lacks the necessary controls to achieve this, whereas a purpose-built decommissioning repository should incorporate information lifecycle management capabilities to handle data retention, data destruction at end of life, eDiscovery and legal hold.

THE DRIVE FOR INNOVATION

Supporting legacy systems is a distraction from new IT initiatives. Decommissioning legacy applications releases IT personnel from firefighting problems on systems that have little strategic value. It reduces support overheads, simplifies the IT environment and allows the IT team to re-focus its energies on innovation rather than ‘keeping the lights on’.

CUSTOMER EXPERIENCE

Legacy systems are often islands of information, isolated from the new applications that have replaced them. Servicing customer requests is slow and inefficient because frontline workers must log in to one or more legacy applications to access customer information. It is particularly difficult to maintain a seamless service following mergers and acquisitions if pre- and post-merger data is held on different systems. Online self-service also becomes problematic if customers are unable to see all their current and historical account information.

A legacy content repository provides secure access to all historical information in one place. It can also be integrated with core business applications to create a ‘single customer view’: a complete record of all interactions with each customer that can be consulted to help personalize and improve service.

USER EXPERIENCE

Older applications may pre-date modern access methods such as web and mobile apps and can be difficult to integrate with other systems. Moving data to a legacy content repository with in-built web and mobile interfaces enables businesses to modernize access. Decommissioning offers a way to provide a better user experience without developing a bespoke application or new user interface to access the data. Modern integration mechanisms such as web services permit easy integration with third-party applications.

BUSINESS INTELLIGENCE

Most organizations have a wealth of operational and customer data locked away in legacy systems: many years’ worth of historical information, ready to deliver valuable business intelligence – if only it was easier to analyze. Decommissioning brings together information from diverse systems, in diverse formats, into a single location. Once pooled, the data can be mined using analysis tools, or interrogated using artificial intelligence.

BUILDING THE BUSINESS CASE

Often the hardest part of a decommissioning program is getting it off the ground.

For organizations considering decommissioning for the first time it can be difficult to know where to start as there could be many applications suitable for retirement.

The first step is for a senior business or IT executive to take ownership of the program.

Another important step is to engage with business stakeholders. It is advisable to build a decommissioning team that includes representatives from the business as well as the IT department. Business representatives are key to the success of any decommissioning project as they will be in the best position to explain how the legacy applications are being used and what information will be needed from them in the future.

The team should classify applications against an agreed set of criteria in order to assess the business case for each one and identify those applications where decommissioning will deliver the greatest return.

Macro 4 has developed a set of common criteria against which individual applications can be reviewed and prioritized. This is based on practical experience of conducting successful decommissioning projects with companies in all major business sectors.

Examples include:

- **Timing:** is there a compelling event approaching such as an imminent hardware or software upgrade?
- **Technical risk:** what is the impact of technical problems and resourcing issues?
- **Business risk:** what factors could affect operational performance or customer service?
- **Hardware and software costs:** what are the true costs of running the application and its underlying infrastructure, and which could be eliminated?
- **Usage:** how many business users need access to the application, and what for?

As part of the business case the organization will also need to assess the relative benefits and costs of potential decommissioning approaches.

EVALUATING DECOMMISSIONING APPROACHES: THE KEY REQUIREMENTS

Any organization embarking on a decommissioning program will need to follow a methodical process, and use appropriate supporting technology, to ensure business continuity.

Any decommissioning solution should meet the following core requirements:

ACCESSIBILITY

The biggest challenge with application decommissioning is ensuring that the data remains easy to access for end users within the business, and external users such as auditors. Historical information is frequently needed as part of important business processes such as customer interactions, and these must not be adversely affected.

The decommissioning solution must allow business users to work with the same information they could get from the legacy application, as easily as they do today – or preferably more easily – using modern access methods such as web and mobile interfaces. Application programming interfaces (APIs) should also be available, to enable integration with other business applications.

DATA RELIABILITY

Business applications apply calculations, logic and other business rules to raw data as part of the end-user experience. For example, a status code '1' from a database table might be displayed on screen as the word 'active' and a status of '2' may be translated into the word 'inactive'. Understanding and applying these rules is essential to ensure that the data will always be recreated accurately and meaningfully at the point of access. To avoid business risk, all additional application logic should be captured during the decommissioning process rather than relying on users or IT personnel with detailed application knowledge being available in the future.

DATA INTEGRITY

To maintain an accurate record, and for compliance purposes, it is essential that the application data cannot be changed once it has been decommissioned. Any solution should provide tamper-evident storage, and non-repudiation measures at a software and hardware level.

USABILITY

The repository for decommissioned data should be easy for staff around the business to use without the need for technical skills, prior knowledge of the original system, or reliance on the IT helpdesk. Staff turnover is a key issue when it comes to accessing historical information over long retention periods – for example seven years plus. Future users may have no experience of the original application so the data must be presented in context to make it self-explanatory. Data should be quick to retrieve, to support customer service (jncluding self-service) and the supplier should also provide capabilities for analyzing data to extract business intelligence.

COMPLIANCE AND INFORMATION LIFECYCLE MANAGEMENT

Countless regulations require data to be retained for specific periods and then destroyed at the end of its useful and legal lifetime. Information lifecycle management is also an important part of any information governance strategy. Organizations should ensure that their chosen decommissioning solution enforces corporate data retention policies, and allows information to be accessed and preserved for eDiscovery and legal hold purposes. This approach minimizes data storage requirements, fulfills statutory compliance obligations, and reduces risk in the event of audit and legal investigations

PERFORMANCE

Initially, application data may need to be accessed regularly after the original application has been decommissioned. A contact center delivering customer service following an acquisition is a typical example of this. Normally access to historical data also reduces over time. Any solution should therefore be scalable (both up and down) to cope with changes in storage and access requirements. Organizations planning to retire more than one application should select a content repository that can support multiple decommissioned systems without impacting performance. The stored data should preferably be compressed to provide savings in storage space.

RISK MANAGEMENT

A common reason for organizations deferring decommissioning initiatives is the perceived risk of losing data or disrupting business activities during and after decommissioning. It's essential to follow an effective decommissioning process to ensure that these issues are managed.

LOW TOTAL COST OF OWNERSHIP

Long-term cost reduction should be the outcome of any decommissioning project. As well as eliminating the licensing and maintenance costs of the original application it is possible to minimize the ongoing cost of retaining the application data in three key areas:

Hardware
An open systems platform is usually the most cost effective for the new content repository, along with the ability to host data from multiple decommissioned applications on a single platform.

Software
Choosing a solution with low support and upgrade costs and no expensive third-party pre-requisites will reduce ongoing costs. Additionally, software that has other information management use cases besides decommissioning will have a lower total cost of ownership.

Hardware and software costs can also be managed by adopting a cloud approach.

Services
Some decommissioning approaches involve a greater investment of technical skills over the long term. Including activities such as processing and reformatting data up front, as part of the initial decommissioning project, will eliminate the need for regular IT involvement in the future.

SECURITY

Security considerations encompass four key areas:

- **User authentication** – preventing unauthorized access to legacy data by deploying mechanisms such as multi-factor authentication, location awareness and biometrics to confirm the identity of system users
- **User access rights** – protecting data by restricting access to different categories and subsets of data by individual users and groups
- **Data segregation** – managing storage of different classes of data in separate locations and on a variety of storage media, for physical security or compliance
- **Data security** – ensuring that the physical data is secured using approaches such as encryption, tamper-proof storage hardware and non-repudiation measures

THE MACRO 4 APPROACH

The Macro 4 decommissioning solution comprises a unique process in combination with the Columbus enterprise information management suite.

The Macro 4 process ensures business continuity by incorporating all business needs for use of the application data into the final decommissioning solution. No prior business application knowledge will be needed to use or support the system in the future.

The Columbus content repository is the final resting place for the decommissioned data. It can store and manage any data from any application running on any platform, together with unstructured content such as documents, images, video, chat and sound recordings.

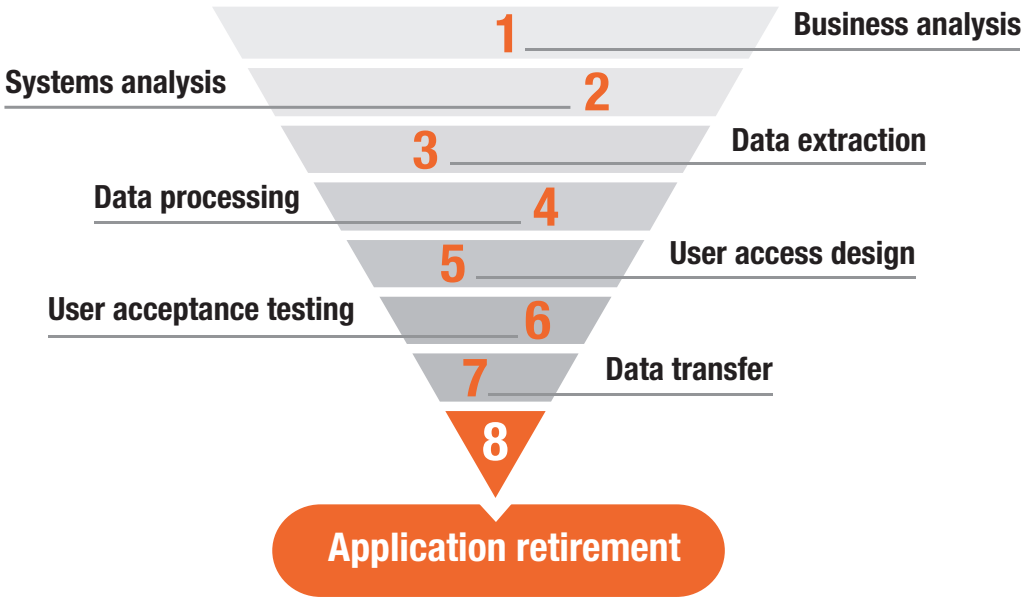

Figure 1: *The Macro 4 decommissioning process*

THE MACRO 4 APPLICATION DECOMMISSIONING PROCESS, STEP BY STEP

Step 1

Business analysis

Macro 4 runs a workshop to analyze the organization's business requirements and understand uses for the data such as:

- Which data needs to be retained, and for how long
- How users work with the application and how they navigate between screens
- What queries or reports users run to obtain information from the application

Step 2

Systems analysis

Systems analysis defines the technical scope of the task, including the location and format of the application data. Information could exist in a range of structured formats such as data files and database tables, as well as unstructured formats such as documents and images. Any business rules for processing the data are also identified, ready to be applied at step four, below.

Step 3

Data extraction

Data from the legacy system is extracted in the best and simplest way possible to meet the data retrieval and compliance needs of the organization. This may include, for example, historical transactional data in the form of database records, and documents such as invoices in a print-spool format. Redundant or system-only data is not extracted, to minimize storage requirements.

Step 4

Data processing

In cases where an application applies business logic to the underlying data in order to display more meaningful information to the user (for example by translating a code into a word, or calculating totals), these business rules are applied during the data processing stage. This ensures users will understand what they see on the screen without the need for prior knowledge.

Step 5

User access design

There are three options for creating visual layouts of the data:

Data view
Standard layouts, such as lists and tables, can be created automatically by Columbus. This is a fast and easy way to create screen views and is suitable for information that only needs a straightforward layout.

Document view
Content that is already formatted, such as documents, images and video, can be stored in its original format, with no further processing required, and accessed alongside application data in the same system.

Business application view
Views are designed that replicate the original application screens, to provide seamless continuity for business users. Screens can also be merged and layouts changed to improve usability and accessibility.

Step 6

User acceptance testing

A prototype system is created using sample data and then tested by business users. They work through typical scenarios, searching for information using a range of selection criteria to satisfy themselves that they can easily access all of the information they need. For example, in the case of a billing application the user might search by ‘customer’, ‘account code’ or by numerical values such as the bill total or line items.

Step 7

Data transfer

On successful completion of user acceptance testing, all of the application data is processed to create meaningful output, which is then compressed, indexed and transferred to Macro 4’s Columbus content repository. The data is stored in a read-only format, with appropriate retention rules and access permissions applied. The repository can be accessed directly, integrated with other applications, such as contact center and ERP systems, and mined to produce business intelligence.

Step 8

Application retirement

Once the data has been transferred to the Columbus content repository the original application can be retired, together with any supporting hardware and software, allowing the organization to realize the benefits identified in the business case.

HOW MACRO 4 MEETS THE KEY DECOMMISSIONING REQUIREMENTS

Macro 4's solution has been designed to meet all of the business requirements for successful decommissioning identified earlier in this document.

ACCESSIBILITY

Business users can continue to retrieve information easily as data from all decommissioned applications is available in one place. The Columbus content repository can be accessed from a customizable web interface and mobile app, while standard APIs allow third-party applications to access historical data seamlessly, without users needing to log in to a separate system.

DATA RELIABILITY

Any business logic required to present information to the user in a meaningful form is embedded in the stored data. This eliminates the risk of losing the ability to understand, interpret and correctly use the data if application or data knowledge is lost from the business in the future.

DATA INTEGRITY

All information from the decommissioned application is held in a secure, access controlled, read-only format with no opportunity to tamper with the data.

USABILITY

Columbus is simple and intuitive to use. Presenting data in a meaningful business context ensures that no additional application knowledge or training will be required. All data layouts are easy to work with; additionally, business application views will look familiar to users because they mirror the original screen layouts. Views can be enhanced to improve the user experience and in-built analysis capabilities or third-party analytics engines can be used to gain business insights from historical data.

COMPLIANCE AND INFORMATION LIFECYCLE MANAGEMENT

Columbus ensures compliance with corporate data retention requirements, including legal hold, through the application of information lifecycle rules. Sensitive data can be redacted for security or compliance reasons.

PERFORMANCE

The Columbus content repository is an enterprise-scalable system, designed to hold billions of data records, together with documents, images and other unstructured content, for instant access by many thousands of users. Decommissioned data is highly compressed – this makes storage highly efficient and ensures fast response times.

RISK MANAGEMENT

Macro 4's decommissioning process minimizes risk and maintains continuity by focusing on the information requirements of business users. This approach also eliminates the need for legacy IT support skills and application knowledge. The same process has been used successfully by organizations in different industries around the world to decommission a vast range of bespoke and packaged software applications.

LOW TOTAL COST OF OWNERSHIP

Macro 4's agile and repeatable decommissioning process is designed to complete projects quickly. In combination with a cost-effective licensing model, available on premises or in the cloud, this delivers a rapid return on investment and a low total cost of ownership. Macro 4 also offers skills transfer so that customers can run their own decommissioning projects using the same process.

Columbus has a lightweight architectural footprint and typically a company can expect a single Columbus instance to meet all of its enterprise decommissioning requirements. Data from thousands of decommissioned applications can be housed on a low-cost hardware platform such as a Windows server. It is also possible to reuse existing hardware that may be available within the business.

Once an application has been decommissioned there are no extra costs downstream – to access or rebuild the data, for example. The Columbus software is self-managing and does not require an administrator to maintain the system.

SECURITY

User authentication

Columbus handles user authentication through its in-built security model and integrates with external authentication systems, including Active Directory, LDAP and SAML-compatible systems, to provide enhanced mechanisms such as multi-factor authentication, location awareness and biometrics.

User access rights

Access can be tightly controlled, right down to individual data field level, for different users and groups.

Data segregation

Columbus enables data to be stored in multiple physical locations and on multiple storage media, with access controlled and monitored centrally.

Data security

The decommissioned data is stored in a compressed and encrypted format as standard. Security can be further enhanced through industry standard AES encryption and the use of tamper-proof storage.

THE MACRO 4 DIFFERENCE

Macro 4 provides a secure and cost-effective method for retaining data from any business application that needs to be retired.

With over twenty years' experience in undertaking decommissioning projects of all sizes, Macro 4 has a track record second to none. The company has a uniquely business-focused approach to decommissioning which is designed to meet the customer's long-term operational and regulatory compliance requirements. Organizations can also expect to reduce IT running costs significantly, with larger projects regularly achieving seven-figure cost savings.

The structured decommissioning process followed by Macro 4 ensures that projects are always delivered on time and on budget. The Macro 4 professional services team provides expert guidance throughout the process, including skills transfer for customers who choose to become fully self-sufficient.

Macro 4's Columbus software is scalable and flexible, and supports archiving of documents and other unstructured content, as well as data. Columbus is also certified for SAP® document and data archiving, including SAP Information Lifecycle Management (ILM).

The Columbus suite meets a wide range of enterprise information management requirements in addition to application decommissioning and delivers business value in areas such as:

- Customer communications management
- Accounts receivable processes, including eInvoicing and credit management
- Information governance and compliance
- Customer and employee self-service
- Enterprise content management

For more information about Macro 4's application decommissioning solutions please visit www.macro4.com/decommissioning.

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About Macro 4

Macro 4 is a global software and services company, focused on solutions that drive digital transformation and enhance customer engagement. Macro 4 helps organizations to deliver better multi-channel experiences, personalize customer communications and drive greater value from their corporate content.

As a division of UNICOM Global Macro 4 benefits from being part of a major provider of integrated software and hardware solutions with over 50 corporate entities throughout the world.

For more information on Macro 4 products and services visit macro4.com.

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