



INTEGRATED APPLICATION LIFECYCLE MANAGEMENT

HOW TO MANAGE SOFTWARE APPLICATIONS MORE EFFICIENTLY - AND MORE WISELY

This paper will introduce you to the concept of integrated Application Lifecycle Management, and how it can help you plan, manage and execute the long-term maintenance of a software solution – from both a business and IT perspective.

INTRODUCTION



Maintenance of legacy systems and support of current technology consume vast amounts of a typical enterprise's software budget. Consequentially, business executives are constantly being asked to do more with less.

This leaves precious few resources to develop standard-based, adaptive applications that meet the core needs of the business. Managing complexity, aligning IT with the business, and enabling agility are top priorities for CIOs who are under pressure to do more for the business with fixed or diminishing budgets.

GUIDING PRINCIPLES ARE NEEDED

Rich modern systems, such as Microsoft Dynamics, require a comprehensive set of shared principles in order for everyone to work uniformly and effectively. Such guiding principles should be anchored in well-defined strategies for how to deal with issues such as change requests, statutory compliance, reporting, support, training, upgrades and implementations. Integrated Application Lifecycle Management (ALM) is a discipline that brings these principles together to help companies manage resources spent on an application efficiently.

This paper introduces you to the challenges integrated ALM addresses, as well as to what comprises integrated ALM and the benefits it can deliver to your business.

WHY THE NEED FOR INTEGRATED ALM?

The challenges of daily operations

WHAT IS INTEGRATED ALM?

Application Lifecycle Management (ALM) is a discipline that can help companies manage resources spent on an application efficiently. It is necessary due to the special challenges of software development and application management.

THE INHERENTLY UNIQUE CHALLENGES OF SOFTWARE DEVELOPMENT

Creating and supporting software that aligns with business objectives carries unique challenges. Virtually all software development projects involve creating something that does not yet exist— if it did, you would simply acquire the existing solution. This means that the risk is immediately higher. This business reality is the key factor that makes software development so difficult and risky an enterprise, and it is the reason why paying attention to the process is essential.

Also, modern software development processes, especially those related to design, are generally distributed across geographical locations. It therefore follows that areas such as real-time collaboration, access to centralized data repositories, cross-tool and cross-project visibility, better project monitoring and reporting are key to developing quality software in less time.

FOUR KEY ISSUES OF APPLICATION MANAGEMENT

The four predominant management issues common to most multi-site or international organization projects today are lack of visibility, ineffective communication, balancing demands with project risk and delivery times and quality assurance.

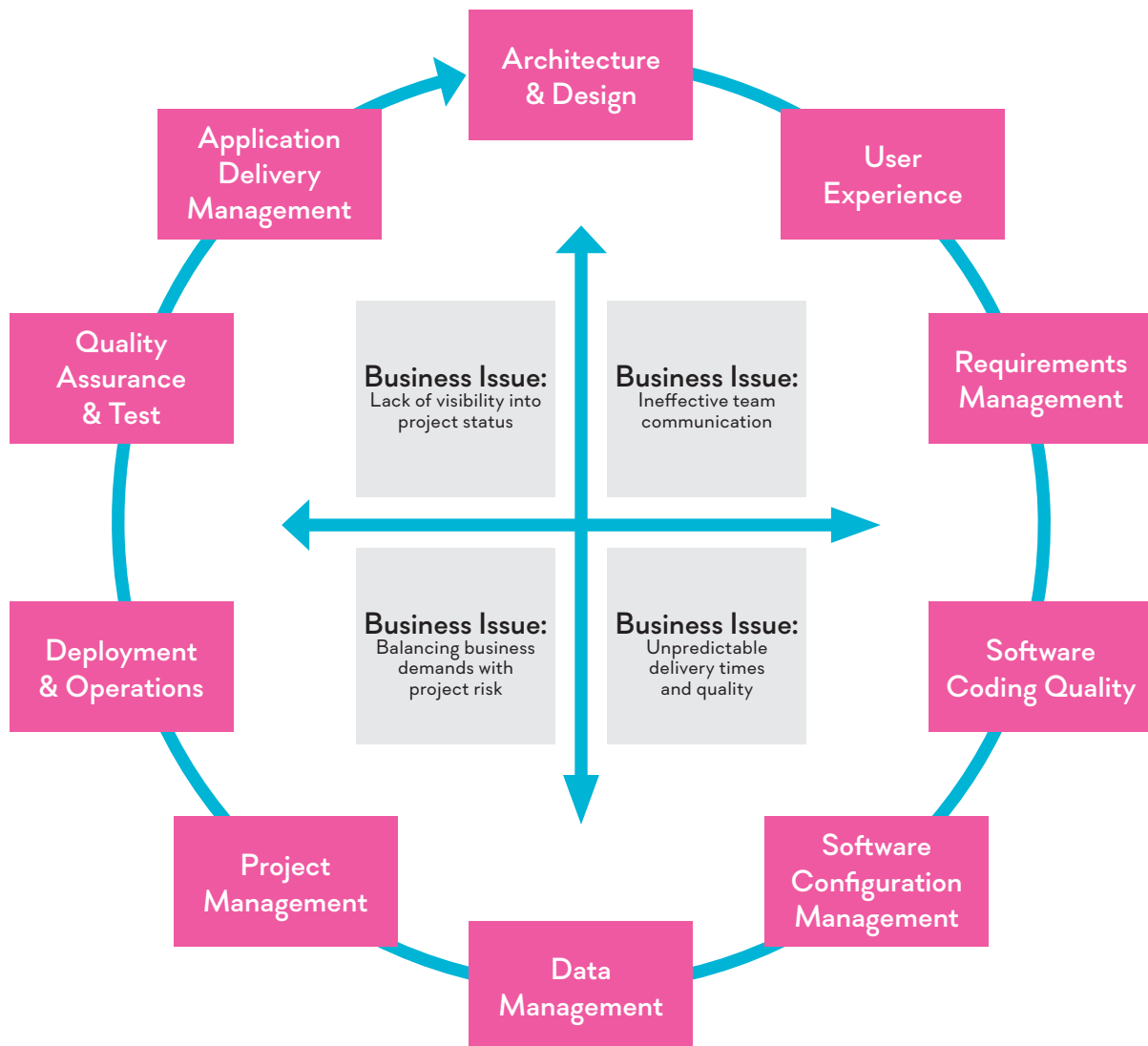


Figure 1: Source Microsoft

The four key business issues shown in the gray areas of the graph are described on the next page.

LACK OF VISIBILITY INTO PROJECT STATUS

This is a primary project management issue that can also include the inability to enforce responsibility, accountability, sign-offs, and toll-gate reviews. The inability to enforce stakeholder involvement, to perform accurate estimation, and to adjust project schedules accordingly are also symptomatic project management issues.

INEFFECTIVE TEAM COMMUNICATION

Coordinating efforts across functional, geographic, and organizational boundaries is a particularly challenging communication issue.

BALANCING BUSINESS DEMANDS WITH PROJECT RISK

Poorly defined and changing requirements, scope creep, unreliable estimates, unclear business objectives, and complex and rapidly evolving technology compound communication issues and increase risk.

UNPREDICTABLE DELIVERY TIMES AND QUALITY

Balancing the quality of service requirements, functional requirements, budget and scheduling are difficult challenges. Eleventh-hour bugs found during testing and in production are all too frequent occurrences.

There are many different areas and factors that can contribute to visibility, communication, risk and delivery issues, and discovering and addressing the underlying problems is not trivial. Additional demands include balancing new project requirements with the financial burden of maintaining existing applications and the need to meet ever more stringent compliance requirements.

THE BOTTOM LINE

The inherent risk of software development, including the challenges associated with the lack of visibility across geographical, functional and organizational boundaries, requires special integrated management principles that promote attention to detail.

- **Project management requires good visibility**
- **Coordinating efforts requires effective communication**
- **Business demands must be balanced with project risks, including quality and delivery times**

INTEGRATED ALM

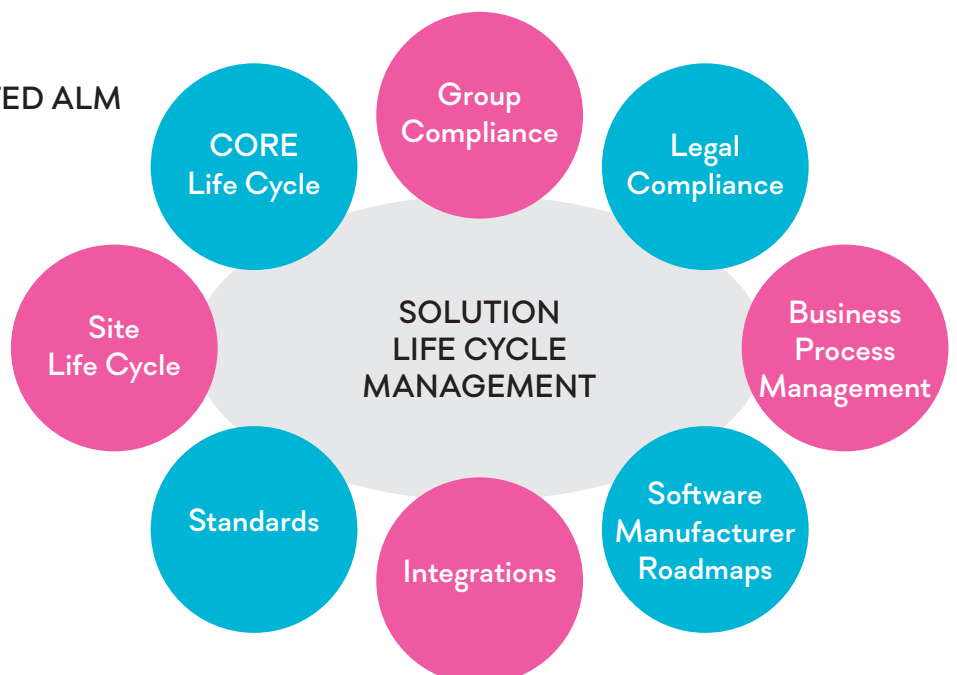
BETTER ALIGNMENT BETWEEN IT AND BUSINESS ADDS VALUE

All of the challenges mentioned in the previous section have given rise to the practice of Integrated ALM. This section will introduce you to the elements of integrated ALM.

Integrated ALM is a discipline that can help companies manage resources efficiently for the lifecycle of the application. This refers the entire time during which an organization spends money developing, governing and maintaining a given computer program, from the initial idea to the end of the application's life. It encompasses requirements management, software architecture, computer programming, software testing, software maintenance, change management, continuous integration, project management and release management.

With integrated ALM, all the tools and stakeholders are synchronized with each other throughout the application development and maintenance stages. This integration ensures that every team member knows who, what, when, and where and why any changes were made during the development process. As a result, there are no last-minute surprises causing delivery delays or project failure. The graph below shows the areas that are integrated, followed by explanations of each area.

INTEGRATED ALM



GROUP COMPLIANCE

Group compliance is the framework of standards and rules which the company is committed to use in their daily operations. This might reflect cultural aspects as well as legal, financial and business strategy compliance areas.

Typical examples are the “business handbook” or more generic group reporting definitions like IFRS, IAS or GAAP based accounting rules. In the application lifecycle, it is assumed that this framework exists, but it is not necessarily covered by automated or IT solutions.

LEGAL COMPLIANCE

Legal compliance is the area where a company has the least possibility to maneuver because the company must be compliant by law. In the case of ERP systems in particular, there are local legal requirements that differ from one country to the next, and the company needs a strategy for how to deal with these local and often conflicting requirements. It is important to find a proven framework that ensures you meet the legal compliance in local countries.

PROACTIVE BUSINESS PROCESS MANAGEMENT

In order to make informed decisions about process management, every business requires a clear strategy. Moreover they need to determine which processes are centrally defined and which ones are locally defined. Business process management requires an empowered and skilled organization with global process owners at its helm. External stakeholders might be part of the process management in integrated advisory roles.

In order to sustain integrated ALM, it must be based on proactive business process management. If this major part of ALM is not defined in the organization, but rather anchored in the culture, then the company risks uncontrolled growth of functions and features and individually defined processes. At the end of the day, the solution becomes unmanageable and needs to be completely rebuilt.

DEFINING SOFTWARE MANUFACTURER ROADMAPS

Each standard software solution has its own lifecycle, which is determined by a software manufacturer such as Microsoft, and your ability to influence it is limited. Companies have to define how often they want to upgrade their system and if it is an update containing both internal and external components. Microsoft has a yearly release cycle with cumulative updates on a monthly basis. The CIO is responsible for bringing clarity into the software portfolio and its relations and dependencies. A recommendation often made to international organizations is to implement the second most current version in order to secure insight and standard components for local legal compliance.

INTEGRATION STRATEGY

Integration influences the quality of the lifecycle. Many integration points are often out of the control of the company itself. For example, Single European Payment Area (SEPA), Electronic Data Exchange (EDI) standards and social media interfaces require bringing internal and external parties together. Solution brokers or best-of-breed solutions lower the level of difficulty for following and managing each individual format or standard. Whatever the case, however, the company should have an integration strategy to maintain some level of control. This will add efficiency enabling them, for example, to reuse a new interface in other parts of the organization.

STANDARDS

A common standard in ALM is Information Technology Infrastructure Library (ITIL) for processes and workflows. Some standards for control, process and workflow are ISO2000 and ISO27001. Whereas Control Objectives for Information and Related Technology (COBIT) are pure control standards, as are the practices of the Project Management Institute (PMI), Six Sigma is focused on tasks. While this document does not reflect any of those standards, the workflows and processes are oriented towards usage in the ITIL foundation.

Each company has to use their own framework of standards and adopt ALM in the best way to match the expectations, requirements, processes and organization of its business. Company Internal standards for project methodology do not influence the change process, execution and transformation of changes and operation.

The most common methodologies are the waterfall model and its variations and the agile model and its variations. Whereas the waterfall model follows a specific sequential flow, the agile model follows best practices in a more flexible manner. Both have their advantages and disadvantages for certain types of projects. In general, one can say that business demands are probably better managed with the agile model, and infrastructure projects are top candidates for the waterfall model.

The application lifecycle is not dependent on the project management methodology, but rather the execution of demands collection, change transformation and operations will vary with both methodologies. This document does not reflect any preferred methodology nor does it classify them.

SITE LIFECYCLE

The site lifecycle is derived from local requirements in combination with CORE (CORporate REquirements) lifecycle and business process management. Important aspects of site lifecycle are to validate the legal compliance requirements and the fit of the company CORE solution and to identify if there are local processes that are not covered by the CORE. If there are changes, these are raised as change requests.

CORE LIFECYCLE

The CORE lifecycle is where the company should direct its focus. It represents the scope of the business processes, tools and master data to be harmonized or standardized across the organization. The work is typically carried out by functional teams of key users invited from local sites and governed by the global process owner. The overall responsibility lies with the application manager.

This section introduced the elements of an integrated ALM; the next section will look at its business benefits.

THE BOTTOM LINE

Integrated ALM is a discipline that can help companies manage resources spent on developing and managing an application more efficiently.

- **The tools and stakeholders are synchronized with each other throughout the application development and maintenance stages**
- **Every team member can keep up with the details of the development process**
- **There is increased synchronization between IT and the business**

PROCESS EFFICIENCY

THE BENEFITS OF INTEGRATED ALM

The last section introduced you to the elements of ALM, and this section will focus on its benefits. From a business perspective, there are numerous benefits derived from using integrated ALM. It helps you proactively manage the elements that typically disrupt processes and offers a framework for significant business value. This value is present within the following three areas of business:

1. TRACEABILITY OF RELATIONSHIPS

This is traditionally a labor-intensive, manual process, where the effort varies with the number and size of projects, the size and scope, and the number of artifact interdependencies. Compliance requirements make traceability a necessity, and integrated ALM imposes greater accountability.

2. AUTOMATION OF HIGH-LEVEL PROCESSES

Development organizations commonly use paper-based approval processes to control handoffs between functional areas. Integrated ALM improves efficiency by automating these handoffs and by providing a central project portal for all associated documentation and workflows.

3. REPORTING TO INCREASE VISIBILITY

Most managers have limited visibility into the progress of development projects. What visibility they have is typically gleaned from subjective testimonials, rather than objective data. The lack of proper reporting also hinders opportunities for process improvement. ALM facilitates integrated reporting functions and automation that provide real-time status information and data for further analysis of all activities.

ALM TRANSFORMS CUSTOMIZED SOFTWARE INTO A STANDARDIZED SOLUTION

When companies end up with a high maintenance cost, a stressed support organization and a system that is hard to bring to the next level, then it is because the application lifecycle or parts of it have not been managed as they should.

That is why when Pipol runs international projects, ALM is an essential part of establishing cost-efficient and professional IT support. One way to see the advantage of ALM is to think of it as a means of taking a traditional customized solution and turning it into a piece of standard software. In the context of moving toward standard software, terms like solution roadmap, release planning, process owners, incident tracking and upgrade strategy begin to make sense.

THE BOTTOM LINE

Introducing integrated ALM within your organization can result in the following business benefits:

BETTER COLLABORATION

- Increased collaboration between business and IT—better alignment of business and IT
- Less resistance from local businesses because of higher transparency and a clear path
- Shared best practices and process learning -- resulting in shorter development cycles and increased productivity

INCREASED EFFICIENCY

- Less scope creep in projects
- Improved project management, including better estimates, better tracking and better reporting through a single, unified view of the project. The improved integration stems from the use of tools that work together rather than disparate tools, poor integration, and duplicated data.
- Increased ability of the IT department to build and adapt applications to support dynamically changing business requirements rapidly

IMPROVED QUALITY AND DECISION-MAKING

- Quality improvements, so the final application meets the requirements of your customers, and meets service-quality requirements
- Fewer bad decisions based on incomplete or misleading information
- Increased accountability, enabling stricter compliance to governance initiatives

WHAT'S NEXT?

The PIPOL logo is displayed in white, bold, sans-serif capital letters on a solid blue square background. The letters are closely spaced, and the 'O' is slightly larger than the other characters.

If you want to hear more about integrated application life cycle management, contact us at MarketingTeam@pipol.com

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