



Applications Lifecycle Methodology

A management Overview

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1. INTRODUCTION

“Unreliable application programs constitute a far greater risk to our environment, society and economy than unsafe cars, toxic pesticides or accidents at nuclear power stations. Organisations should be vigilant to reduce the risk, not increase it”

C A R Hoare, 1998 Turing Award Lecture

Today IT systems and the business operation are closely integrated and increasingly organisations are using applications that are developed and maintained by third party suppliers. These applications are often critical to the delivery of an organisation’s services or products.

Organisations have to be sure at all times of the quality and stability of developed applications supplied by their IT partners. Application supportability and stability are becoming increasingly important factors in the production and quality of an organisation’s final product or service.

Application bugs and failures can be immediately reflected in a major problem with a business process ultimately affecting business profit and customer satisfaction.

Application malfunctions can result in factories unable to ship goods, accounts departments unable to issue invoices or sales departments unable to accept or process orders.

In addition the days of ample IT budgets are gone. Indeed organisations are operating on much tighter budgets. However applications need to be developed in an environment where stability and supportability are inherent to the application design from the start of the project and ongoing quality control is essential.

Managed applications development should offer more than reduced cost to the client to enable the project to be carried out within budget parameters. It should provide full functionality but also a high level of supportability thus increasing stability and productivity. It is these crucial factors that cut the real costs of IT development and support for an organisation and provide real value.

2. APPLICATIONS LIFECYCLE METHODOLOGY

Application Lifecycle Methodology ensures development work is carried out in a fully managed and highly organised manner. The inclusion of the term 'Lifecycle' in the process is to signify the importance of long term support considerations and efficiency in all development work undertaken by a software development company.

Application Lifecycle Methodology ensures projects are completed in optimum time, at minimum cost, and with low associated risk. It is designed to help develop and implement efficient and reliable systems. The development of applications that are reliable and stable results in decreased operational and support costs for our clients.

Application Lifecycle Methodology is the essential connective tissue that holds managed development projects together. It is a defined series of steps leading to the accomplishment of a goal.

Specific objectives of the Application Lifecycle Methodology are:

- ensure that systems are developed in a controlled manner
- provide significant review points, in order to manage the costs and risks involved
- provide opportunities to add significant value and stability to the system
- provide an agreed framework for the joint development of systems by users & IT
- improve communication and commitment between the development team, future support teams and the end users of the system
- prevent duplication of effort
- provide comprehensive documentation at an appropriate and useful level
- provide a common terminology in systems development and support
- serve as a reference for development and support team staff

The exact methodology used to develop or maintain a system should be appropriate to the size, type, and scope of the development. Methodologies need to be implemented effectively, with the right processes being built in depending on the development being done.

The characteristics of development work are not going to change whether a formal process is used or not. What changes is how the events are dealt with when the work is in progress. Are they dealt with haphazardly and reactively, or proactively with a smoothly running process?

Having a methodology in place does not mean

- that there are no problems
- that risks go away
- that there are no surprises

What it does mean is that there are standard processes in place to deal with all contingencies.

A good methodology, such as Application Lifecycle Methodology, provides a framework, process, guidelines and techniques to ensure successful development projects and therefore provides value to the development, and to the business overall.

3. WHAT IS INVOLVED?

Application Lifecycle Methodology provides a realistic picture of the project and resources committed to it. It consists of steps and procedures the development team can reproduce and reuse and most importantly, incorporates lessons learned into new developments.

At a high level the Applications Lifecycle Methodology will:

- describe accurately what is required from the system
- control all the processes of the development of the system
- ensure effective risk management
- provide ongoing project evaluation
- ensure that what is delivered meets the stated requirement

In more detail the Application Development Methodology will typically involve the following key factors:

- clearly defined business goals
- clearly defined plans
- developing scope and requirements
- creating measurable business outcomes and achievement networks
- defining schedules
- defining budgets
- securing resources
- identifying risks
- defining scope
- defining the development team organisation
- quality control procedures
- change control procedures **
- monitoring activities and deliverables
- communicating progress
- regular review procedures

The Application Development Methodology will support the following processes:

- clear communications of business outcomes, not just technical detail
- techniques for clearly communicating assignments to each team member
- allow early identification of problems before it is too late to solve them
- provide a consistent approach to developing and managing projects
- allow for different levels of techniques appropriate for projects of different scales
- cross-functional accountability and authority processes
- high-performance teams with achievement-oriented cultures
- enables the development team to maximize consistency

**** *Change management processes*** – an important part of a development lifecycle:

- establish and enforce a clear and realistic process for change management
- prioritise the proposed requirement changes against the requirements yet to be implemented
- ensure that each change and its impact are sufficiently analysed to avoid unforeseen complexities and slipping schedules and deadlines
- analyse associated costs and benefits and all the associated tasks and resource impacts
- be disciplined about following suitable version control policies to ensure that all the project participants are working on the latest requirements

4. WHAT ARE THE BENEFITS?

Application Lifecycle Methodology provides significant, quantifiable benefits in terms of:

4.1 Productivity

- by reducing the risk of poorly defined objectives
- by reducing delivery timescales
- fewer surprises

4.2 Quality

- enhanced quality of deliverables
- by ensuring that the requirements are quantifiable and measurable
- by reducing risk
- delivering supportable systems through involvement of support teams throughout development phases
- reduced number of incidents
- services can be restored after failure in less time
- operational efficiency of IT staff significantly improved

4.3 Communication

- provides a common language for all participants in the project
- clearly outlines the requirements for all relevant parties
- involvement of management and stakeholders throughout the project
- regular reviews of progress against plan and against the business case
- flexible decision points
- assignments and accountability are clear to all project team members

4.4 Management decision making

- planning, resource allocation, and monitoring
- prioritise requirements by their relative importance
- identify high cost-low value functionality
- ensure scope is clearly defined
- focus management on business-relevant outcomes, not activities
- lower project spending
- cost effective development projects

Consistent planning processes allow executives to:

- compare costs and benefits
- effectively allocate money and resource to projects

5. WHY PROJECTS FAIL

Listed below are some of the common reasons why development projects fail. By applying the processes contained within Application Lifecycle Methodology the risk of failure is reduced or eliminated in each of these areas.

- weak standard processes
- poorly defined goals and objectives
- techniques used inconsistently
- unrealistic schedules
- inappropriate staffing
- changing requirements during development
- poor quality work
- lack of communication with support, the user or the business sponsor
- unrealistic time scales
- scope creep
- no change control system
- poor testing
- ineffective risk analysis

6. BEST PRACTICES

It is required to initiate a number of best practices within the Applications Lifecycle Methodology:

- business requirements management
- technical requirements management
- software quality verification
- change control and management
- progress review management
- risk assessment management

7. CONCLUSION

Applications Lifecycle Methodology advocates a structured approach to the software development lifecycle. By utilising proven and flexible processes this methodology delivers a stable and cost effective solution.

Applications Lifecycle Methodology results in a predictable, rational process for software development projects.