



Promoting IT Efficiency

**QAIassist**  
*Software Development Methodology  
Implementation Guide*

QAIassist Integrated Methodology® is an effective process-based methodology incorporating the three (project management, software development, software testing) primary information technology (IT) methodologies. This article briefly describes the Software Development Methodology and how it can be implemented into the workplace.

## **Context**

QAIassist Integrated Methodology is a scalable deliverable based methodology applicable to a wide range of organizations and projects irrespective of size or complexity. It can be implemented in whole or in part – some organizations will benefit from the Project Management Methodology, some organizations will benefit from the Software Development Methodology, some organizations will benefit from the Software Testing Methodology, some organizations will benefit from implementing all three (project management, software development, software testing) of the methodologies.

The Project Management Methodology provides organizations and project teams the ability to effectively initiate, plan, oversee and complete a project. The Software Development Methodology offers IT development and maintenance teams the ability to define requirements, design applications and develop the necessary functionality. The Software Testing Methodology provides IT development and maintenance teams the ability to ensure the necessary functionality has been developed and adheres to the authorized business requirements.

All three (project management, software development, software testing) methodologies of the QAIassist Integrated Methodology are applicable in a multitude of IT development and maintenance environments and can be leveraged using all industry recognized delivery (waterfall, agile, spiral, extreme, rapid application development) approaches.

## **Benefits**

The Software Development Methodology is a repeatable process – in being repeatable, it can increase the efficiency and productivity of project teams and IT organizations by up to 25 percent of their existing delivery capacity. These tangible increases in productivity can be attributed to a multitude of factors including improved communications of project team members, clear and concise definition and authorization of requirements, designing and building functionality according to the authorized requirements, testing the functionality to ensure it addresses the business need, monitoring and oversight of the project from start to finish,

consistently reporting project status (progress, issues, risks) to project stakeholders. Other benefits include

*Repeatable Organizational IT Process* - the Software Development Methodology can be applied as an organizational process. As a process, organizations are able to define, utilize and repeat a common approach used to develop and support their products and business applications. By utilizing the methodology as a process, organizations are able to introduce corporate quality assurance (quality products and applications are produced when the process is followed) and organizational improvement (analyzing the metrics and measurements of how the process is being used).

*Consistently Deliver Applications on Time & Budget* - in being repeatable, the Software Development Methodology affords organizations reliability in how products and business applications are developed and supported. Project team members (stakeholders, business users and IT) are able to understand their roles and responsibilities, project plans can be defined and approved, and the necessary deliverables and artifacts needed to complete the project can be identified. Applying the Software Development Methodology establishes a degree of structure that project teams leverage (and re-use) to consistently deliver their projects on time and on budget – the more often it is used the more proficient the project team becomes at applying it – the more proficient they become the greater the savings in time and budget.

*Optimize Communications (Stakeholder, Business Users, IT Project Teams)* - the Software Development Methodology acts as the glue that keeps a project team together and working from the same page. This includes project stakeholders, business users and IT project teams. Project Managers are able to dedicate project resources to specific responsibilities and the creation of specific deliverables and artifacts as part of the project plan. Project team members have a clear understanding of their roles and responsibilities. Project team members have a clear understanding of the procedures used to administer the project. Project Stakeholders have a mechanism to quantify the status of the project team with regard to progress, risks and issues.

*Incorporate Organizational Governance* - the Software Development Methodology provides Senior Management a tool that can provide predictability (schedule, costs, quality) on how IT staff develop and maintain products and applications. This predictability affords Senior Management flexibility to budget and prioritize what applications are to be completed, when they can be completed and what resources will be available to deliver these products and applications. This also provides Senior Management an ability to re-adjust the priorities of the IT resources to reflect the business priorities.

*Establish Resource Diversity* - the Software Development Methodology provides organizations a basis for developing cross-functional expertise in both the business and the IT sides of the house. As a resource becomes more learned on how the lifecycle is applied they can leverage that expertise to become effective in other areas of the business (ie an apprentice carpenter that has learned to use a hammer to build a dog house can rely and re-use that same

knowledge when building a deck or a house). This offers flexibility in how resources are to be applied and offers staff an avenue to gain additional expertise and knowledge in other areas of the business.

## **Pre-Implementation Considerations**

Though implementing a Software Development Methodology may appear to be a simple exercise there is a significant amount of effort that must be applied before the organization can achieve an incremental increase in the efficiency and delivery capacity of IT development and maintenance teams. Factors that have to be considered as part of implementing the Software Development Methodology include

**Existing Corporate Culture and Hierarchy** – every organization has its own unique corporate hierarchy and culture. Based on the nature (ie speed to market, quality, legislative responsibility, etc) of the business, every organization has had to evolve to optimize its structure and operational capability. In some cases this translates into flat organizations whose operations are to get the product out as soon as possible, in other cases this translates into formally structured organizations with rigid protocols that ensure products meet specific safety requirements. Prior to implementing the Software Development Methodology the organization must have a good understanding of its existing culture and operations. This internal understanding will provide the organization the information they require to effectively leverage the Software Development Methodology – the more familiar the organization is with its existing culture and operations the greater the benefits the organization will derive upon implementing the Software Development Methodology. Corporate cultures vary in the acceptance/tolerance/rejection of organizational change – in some organizations “change” is easy and promoted, in some organizations “change” is more difficult but worthwhile once implemented, in some organizations “change” is not an option.

**Identifying IT Efficiency Opportunities & Priorities** – every organization develops and delivers its products and services differently from every other organization. One organization may be more effective applying project management across its organization, another organization may be more effective at software development and another organization may be more effective at software testing. As organizations obtain more familiarity with the Software Development Methodology they recognize the benefits that can be derived and the specific areas where greater efficiency can be obtained. The Software Development Methodology provides organizations a diversified tool they can rely upon to increase their IT efficiency and operational performance – the organization should understand its existing strengths and weaknesses to be able to prioritize where and how the Software Development Methodology can best contribute to its operational performance and bottom line.

**Assessing and Prioritizing Methodology ROI Alternatives** – implementation of an organization Software Development Methodology is a strategic corporate undertaking. Organizations must assess the tradeoffs (benefits versus cost) they are to derive from the implementation of the Software Development Methodology from three perspectives. First, the immediate costs associated with obtaining, customizing and implementing the Software Development Methodology. Second, determining the ongoing resources it will take to apply a corporate

governance function for the Software Development Methodology. Third, assessing the short and long term benefits (tangible and intangible) once the Software Development Methodology has been implemented successfully.

## **Implementation**

The QAIassist Integrated Methodology is comprised of the three (project management, software development, software testing) primary information technology (IT) methodology– it can be implemented in whole or in parts. The following protocol is used to help organizations maximize the benefits they can derive from using the Software Development Methodology

**Generic Evaluation** – An exercise is conducted to identify an organizations existing IT practices to determine the strengths, weaknesses and opportunities for improvement. This exercise identifies the demands on the IT resources and how they align with organizational priorities and opportunities. This exercise results in an organization knowing whether it can benefit from implementing the Software Development Methodology, where it will benefit, and how it will benefit. Once this exercise is completed the organizational will have a basis for planning their Software Development Methodology implementation.

**Customization & Scaling** – the Software Development Methodology must be customized to meet the specific and unique needs of the organization. An organization must ensure the lifecycle aligns with organizational priorities – the purpose of the methodology is to provide resources a tool they can leverage to deliver greater efficiency. As part of this exercise, the Software Development Methodology must be pared/scaled to ensure resources are not encumbered when applying it. This exercise provides the basis for defining a corporate plan that will be used to implement the lifecycle.

**Customize Training Curriculum & Training Material** – the organization will need to create a training curriculum and deliver the appropriate courseware to ensure resources understand the new Software Development Methodology, their role in implementing and applying it and how the organization intends to leverage it. Upon the completion of the organizational training, resources will have the necessary information to begin applying the Software Development Methodology.

**Establish Corporate Governance** – in conjunction with customizing/scaling the Software Development Methodology to meet the IT efficiency goals and developing the training curriculum and courseware the organization must introduce an operational function to monitor how the Software Development Methodology is being applied. This function will be used to assess and report the status associated with implementing the methodology as well as the ongoing monitoring of how the methodology is being applied once the initial implementation is complete. This independent function will report to corporate stakeholders on how the organizational resources are applying the methodology. This function will contribute to

corporate quality assurance (premise – when the methodology is used it will deliver better products and applications).

Ongoing Methodology Evaluation (fine tuning) – the organization should remain nimble and vigilant in its ability to deliver quality products and applications on time and within budget. This can be accomplished by analyzing how the Software Development Methodology is being applied, how it can be improved upon and how it can be optimized to meet the specific needs and requirements. This is accomplished through acquiring, disseminating and distributing metric and measurement information on who is using the methodology, how the methodology is being applied and the benefits being derived.

*QAassist is the industry recognized benchmark in information technology (IT) methodologies for small and mid-sized business (SMB's) – including the certification and support of practitioners delivering QAassist IT Methodology solutions. Visit [QAassist's website](http://www.qaassist.com)—  
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