



WHAT MANAGEMENT SUPPORT TOOLS SHOULD A CIO INVEST IN?

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PURPOSE

There is an app for that! We live in a time where there are software solutions for almost every imaginable need, solutions promising to make our lives easier, simpler, faster, better. The enterprise application space is no different. Creative minds have devised ways to improve enterprise processes, increase productivity, improve outcomes and deliver multi-fold return on investment. So how many applications does the enterprise really need? Do these applications really deliver a return? At what point does investment in tools start delivering a diminishing return? Last, but not the least, how do you determine the tools your enterprise needs and extract the most value from your investment in software applications? The analysis in this paper focuses on the suite of tools available to a Chief Information Officer (CIO) to manage his or her activities i.e. the world of CIO Management Support Tools.

WHAT MANAGEMENT SUPPORT DOES A CIO PROVIDE?

A CIO has responsibility for all Information Technology functions within the enterprise. From a management perspective, they are involved in aligning IT objectives to the enterprise mission, managing cost, schedule and performance on complex projects, establishing service provider partnerships, managing risk, optimizing enterprise processes via IT, participating in governance processes, defining and managing enterprise architecture standards and delivering results with tight budgets.

When one thinks of the CIO's management role IT Service Management (Help Desk, Infrastructure, etc.) and Project Management software is what typically comes to mind due to the requirements of complex projects that are inherent to IT. However, given the diverse nature of the CIO's management functions, there are other management responsibilities that are equally important to consider. Requirements Management, Project Management, IT Portfolio Management, and Enterprise Architecture are also vital CIO responsibilities and will be the focus of this paper.

Requirements Management is the process of documenting, analyzing, tracing, prioritizing and agreeing on requirements and then controlling change and communicating to relevant stakeholders. It is a continuous process throughout a project. A requirement is a capability to which a project outcome (product or service) should conform. This is important because the CIO is responsible for delivering IT capabilities against business requirements. The ability to report back fulfillment of the requirement, in terms of compliance, completeness, coverage and consistency is critical.

Project Management is the discipline of planning, organizing, securing, and managing resources to achieve the planned results from IT projects. Typical constraints that are juggled in project management include scope, time, and resources. Project Management is critical to ensuring the organization obtains desired results in a timely manner using the budgeted resources.



IT Portfolio Management is the application of systematic management to large classes of items managed by enterprise Information Technology (IT) capabilities. Examples of IT portfolios would be planned initiatives, projects, and ongoing IT services (such as application support). The value of IT portfolio management is the objectivity and structure it brings to informal IT efforts, enabling alignment of scarce resources to business priorities, measurement and management of progress and performance and demonstrated return on IT investments.

Enterprise Architecture is the process of aligning a business's strategic vision with its information technology. It connects different business units for synergistic communication and collaboration, creating a more seamless customer (or end-user) experience.

WHAT ARE THE TOOLS AVAILABLE? ARE ALL OF THEM REQUIRED?

Requirements Management Tools

These tools offer features that help improve the organization's requirement management capability and specifically help overcome issues like keeping the requirements current, collaborating on requirements between teams and maintaining an easy to use connection between the functional requirements and corresponding use cases, designs, code, tests, and project tasks. In addition these tools often have minimal project management capabilities, costing and reporting. Using the functionality offered by the requirement management tools an organization can:

- Define a requirements baseline for each release, maintain a history of changes and revert to previous version if needed.
- Track detailed requirements attributes such as date created and version number, author, person responsible, origin or rationale, release number, status, priority, cost, difficulty, stability, and risk. Most of the tools let the user incorporate non-textual objects such as Microsoft Excel worksheets and images into the requirements.
- Collaborate and eliminate version control issues as everyone working on the project is able to view the most current version of the requirements. Security features restrict who can view and edit the requirements. Some tools include e-mail notifications on changes and deletions to requirements.
- Manage relationship between requirements to analyze the impact of proposed changes and plan sequencing of requirements during the development cycle.
- Track status of each requirement during development and manage risks related to delays.
- Analyze requirements by using features to sort, filter, or query the database to view subsets of the requirements that have specific attribute values.
- Use the robust traceability features to identify "suspect requirements" that might be affected if a linked requirement is changed or deleted.

Some examples of requirements management tools include: [Jama Contour](#), [Requisite Pro](#), [DOORS](#), [Rally](#)

Project Management Tools



Project management tools are designed to allow for the management of anywhere from a single project to a full portfolio of projects. They provide a bottom up approach to portfolio management with an emphasis on project level decisions that incorporate some of the abilities of a full portfolio management software. Using project management tools enables an organization to:

- Create multi-tiered hierarchies tying together organizational breakdown structures (OBS), enterprise project structures (EPS), work breakdown structures (WBS), and resource structures, creating the foundation for easily accessible, well organized, and useful data.
- Fully utilize and manage available resources in a dynamic environment, allowing managers to quickly identify resource conflicts across multiple projects and take the appropriate actions to alleviate the resource strain.
- Incorporate role-based functionality by aligning team members with their various needs and responsibilities, utilizing their role to produce focused dashboards and forms thus giving them the tools they need to manage individual aspects of any project.
- Use built in workflow processes to enhance efficiency, allowing project team members to know exactly what needs to be done and when. This facilitates communication and collaboration without losing valuable time spent using more traditional, slower means of communication that can create bottlenecks.
- Establish baseline project plans as point of references, providing a solid starting point to identify significant changes and development of contingency plans.
- Develop executive level dashboard views, organizing valuable data at both the project and portfolio level to provide additional analysis for the CIO.

Some examples of project management tools include: [QuickBase](#), [Zoho](#), [Project Insight](#), [P6](#), [Project.net](#), [Microsoft Project](#)

IT Portfolio Management Tools

IT portfolio management tools allow for managing IT investments using a traditional phased approach such as the CPIC Select/Control/Evaluate approach. They can provide greater visibility and control over an organizations portfolio, giving the CIO the ability to more easily prioritize investments, align to the mission, and perform gap analysis. The enhanced visibility and control provide for greater transparency and accountability, opening the process up to monitoring and evaluation helping the CIO to run IT like a business. Using the functionality of these IT portfolio management tools, an organization can:

- Define a portfolio of projects and investments and create relationships between these projects and investments.
- Create and define customized data points for all projects and investments.
- Facilitate the implementation of scoring models tailored to the mission of the organization.
- Using the aforementioned scoring models one can evaluate and compare projects to determine greatest return on investment based on customizable metrics, creating dashboards and reports that help align strategies with resources to ensure that organizational strategic objectives are met.



- The defined relationships between investments allows for enhanced scenario analysis, being able to forecast cost, schedule, and capability impacts based on the addition or removal of projects.
- Manage portfolio by exception allowing for proactive intervention to resolve issues.
- Track costs, risks, and issues associated with projects to use in the Select, Control, and Evaluate phases of Capital Planning and Investment Control (CPIC). In addition, the tools provide the ability to track project milestones for stage-gate reviews.

Some examples of IT portfolio management tools include: [Oracle PPM](#), [PowerSteering](#), [CA Clarity](#), and [Planview Enterprise](#)

Enterprise Management Tools

Enterprise management tools allow you to model, integrate, automate, and manage both human-centric and system-based processes, helping bridge the gap between business and IT. An enterprise management tool is a comprehensive suite of tools that optimize automated workflows to continuously make them more efficient. This gives the CIO the ability to review, plan and revamp business processes, applications, data, and infrastructure. With an enterprise management tool, an organization is able to:

- Integrate business operations with IT resources to reduce inefficiencies and duplication.
- Create frameworks defining “as-is” and “to-be” environments, and develop transition plans for moving between the two.
- Effectively manage workflow processes at the enterprise level, such as process defining, modeling, analysis and process optimization.
- Continuously evaluate and retool workflow processes to improve overall efficiency.
- Digitize, consolidate, and automate the current workflow processes to eliminate bottlenecks and increase efficiency.
- Allows for increased governance with the ability to distinguish between execution rules and the workflow processes.

Some examples of enterprise management tools include: [OpenText](#), [Pegasystems](#), [IBM Business Process Manager Standard](#), [Software AG](#), [Appian](#)

HOW DO THESE TOOLS COMPLEMENT EACH OTHER AND INTEGRATE TO DELIVER END-TO-END SUPPORT?

The tools discussed above each have distinct advantages, and while there is overlap with their functionality, it is important to note that some are much better suited to fulfill particular needs than others. To deliver end-to-end support it is critical to identify all the functionality required by your organization and to pick the tools with the best combination of functionality to fit those needs. In addition using the APIs that come with most COTS applications today it is possible to get different



tools to interact and push and pull common data points between tools. Below is a matrix outlining basic functionality provided by the various tools available to the CIO.

	Requirements Management Tools	Project Management Tools	IT Portfolio Management Tools	Enterprise Architecture Tools
Collaborative Software	X	X	X	X
	Requirements Management Tools	Project Management Tools	IT Portfolio Management Tools	Enterprise Architecture Tools
Traceability	X			
Project Tracking	X	X	X	
Requirements Tracking	X	X		
Resource Tracking		X	X	
Task Management	X	X		
Timesheet		X		
Project Portfolio Management		X	X	
Scoring		X	X	
Workflow System	X	X	X	X
Reporting	X	X	X	X

HOW DO I GET THE BEST VALUE FROM TOOLS I INVEST IN?

As with any investment it is important to maximize the value of the tools you invest in. The tools discussed above form an overlapping grid, with some tool's functions and capabilities being duplicated by others. Depending on the size and maturity of your organization, it is important to understand that not every tool will be a correct fit for your organization. An organization that is managing only a part of several small projects would not need the same tool as an organization owning hundreds of investments. To realize the full potential of any investments made in tools, it is necessary to make sure that the need is clearly defined, and that the desired outcome is fully understood. Once the need and desired outcome are understood, and the organizational maturity has been achieved, it is a matter of picking the toolset that offers the best fit in addition to instituting a change management process tailored to the new toolsets. It is important to note that just picking and implementing a tool is not sufficient; to fully maximize the benefit of any tool internal business processes of the organization must be changed to incorporate the many features that come with it. If employing multiple tools, one needs to find the combination with the least overlap while still meeting the organizational needs. In addition, consideration needs to be given to



the integration capability between tools, as in today's ever connected world one cannot afford to have multiple IT systems working in isolated silos.

In conclusion:

- Choose your enterprise management tools wisely based on your current process maturity and the strategy with which you want your processes to continue to mature.
- Marry the maturation of your organization with its needs and desired functionality.
- Institute a change management process combined with the addition of the enterprise tools to help ensure maximum adoption and utilization.

By thoroughly analyzing your organization you will be able to find the best fit of tools customized to where your organization is at and where it will be in the future.