

# EXPERT SERIES

The "Expert Series" is a collection of articles, papers and writings by PM Solutions' associates and other industry experts that provides insight into the practice and value of project management.

## Technology and the Community of Practice

Points for the practitioner to keep in mind

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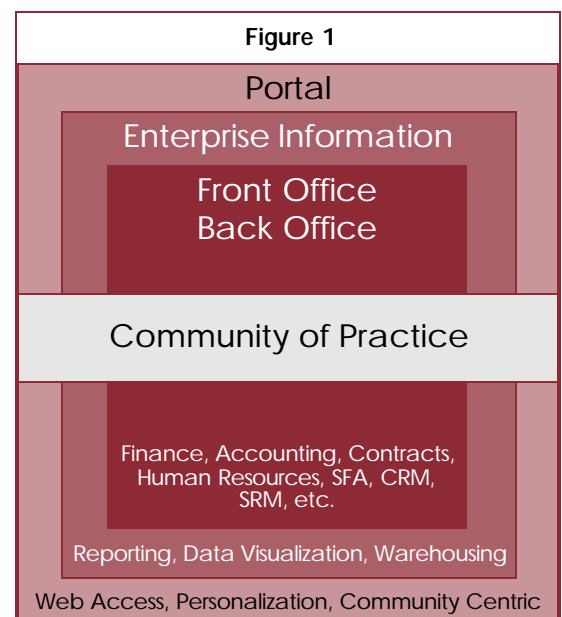
FROM A TECHNICAL PERSPECTIVE, the Community of Practice (CoP) in context is quite simply a mechanism for collecting, storing, sharing, and using information around a given domain. The purpose of which is, of course, to facilitate a more collaborative, productive, effective, and efficient result. As applied to project management, that domain or practice is centric to the definition and successful execution of a project or portfolio of projects. Such a community may exist in a variety of forms. For example, one may have the community within a given project team. Likewise, the community may be that of a group of project teams or the staff of a Project Management Office. Still further, the community may be defined as the management team within or outside of the Project Office, or all of the above. The point being that however the community is defined, the underlying technical objectives remain the same: to collect, store, share, and use the information within the given practice area to a beneficial result.

As such, this article seeks to place the project management community of practice within the technical framework of today's business models. Specifically, to demonstrate how the CoP fits within the technical framework of business and how technology might be applied to develop or support a given CoP.

### Business Technology Context

The CoP is best viewed as a cross-section of the technology landscape in today's businesses (see Figure 1). Typical business architectures are wrestling with the integration of their front office and back office suites, the establishment of enterprise information, and access of that information via portal paradigms. Based on one's role in the organization, information is either "pushed" or "pulled" and you may find yourself trying to "drive out" to larger information sets or "drive down" respectively to detailed information sets. In either case, a given member of the community may find themselves firmly entrenched in a given view of the information. What a CoP attempts to do is cut across these views, allowing all members of the community appropriate reach to the rest of the community.

As a practical matter, what the PM CoP finds itself doing is integrating information and providing it to the appropriate individuals in the community. As an example, the CoP may integrate cost information with finance and accounting, schedule information with contracts, and resource information with HR to provide detailed project portfolio reporting to senior management halfway across the world via an Internet browser interface.



While a somewhat simple example of a much more complex set of capabilities, what this example demonstrates is that the CoP requires a common yet dynamic set of tools and system interfaces to deliver the necessary results inside the business model. The CoP is more than a set of roles in an organization; it's an integrated set of functions within the community defined by needs of the community and controlled by technical implementations of these functions. More to the point, these functions are predominately implemented through information technology within and across organizations. Additionally, the functions may vary widely in scope from single-user applications to enterprise-wide implementations yet remain focused on the community need. In the case of project management one is typically dealing with functions of cost, schedule, technical performance, resource usage, configuration control, quality, communication, and the like.

### Technical Framework

The technologies by which these functions are implemented require consideration of the community, the enterprise, and the business. Figure 2 represents a framework to use in developing one's technical approach to implementing a CoP. Each component is a building block to the complete framework. The ensuing discussion presents each component and seven significant questions one should ask in selecting the appropriate technologies for your CoP. To assist the reader in understanding each component, sample technologies are presented only to give the reader a context of what these technologies are and do not represent a specific product recommendation.

The first consideration is the component by which the community members will be accessing the CoP. Consideration should be given to both the devices themselves and the nature of the users' access. Questions to ask in determining your technology needs might include:

Figure 2

Sample Technologies	Technical Considerations	
Palmtop/Handheld Devices Laptops Web Browser	<b>Device/Access</b>	Thin vs. Thick Client Single vs. Multi Sign-On Secure vs. Open
Plumtree Vignette SAP Portals	<b>Portal</b>	Scalability Extendability Integration
MS Project SAP Siebal	<b>Applications</b>	Community Need User Competency Functionality
Web Sphere BEA IIS	<b>Servers</b>	Scalability Performance Security
DB2 SQL Server Oracles	<b>Databases</b>	Volume Throughput Functional Characteristics

- What devices will the community support?
- What are the minimal operating requirements of user devices to participate in the CoP?
- Should users have access to selected systems or all functions?
- Should users be required to sign-in to each function or sign-in to the system one time and access all their functions?
- How should security and information sharing levels be defined?
- What information needs to be protected and how is it accomplished?
- How are access rights granted and controlled and does the technology selected to control access support a growing community?

Next, given the propagation of Web technology combined with the proliferation of portal technology and its somewhat synonymous functionality with a community of practice, we recommend consideration be given to portal technology as a natural component of the CoP framework. Consideration should be given to how scalable, extendable, and to what degree the portal can be integrated with the other technologies. Questions to ask in determining your technology needs might include:

- Do users have to run unique client software on their devices?
- How many users can the technology accommodate concurrently?
- Can the portal work in conjunction with other selected technologies?
- Are there built-in integration points to application technologies or APIs that would allow for the construction of same?
- Is the technology the portal runs on compatible with the other selected technologies?
- Does the portal support the personalization or user intimacy models required by the CoP?
- Is the portal able to expand to support a growing CoP and is it cost effective to do so?

One of the most critical components of the framework is the selection of application technologies. This is typically the heart of the CoP framework and where the bulk of the information and user activity lay. While there tend to be a few core systems such as project management software, ERP applications, or CRM applications, there is just as often the need for a variety of custom, niche, or one-of-a-kind applications. Consideration should be given to the needs of the community the CoP is servicing, the abilities of those in the given community to utilize technology, and the functionality needed within the community. Questions to ask in determining your technology needs might include:

- What are the various user groups within the community and what are the unique functions they perform that the applications could provide?
- What are the outputs these applications need to provide and the priorities of the community that these outputs support?
- Which application software packages provide the closest match to our output priorities?
- Are we able to change our business processes to match those of the package with the closest fit?
- What is the cost/benefit analysis of building vs. buying the needed applications?
- Do users have the ability to utilize the preferred application?
- Does the application fit within the selected technical framework or is there application functionality we are willing to forgo to have a more rapid or cost-effective solution?

Another significant component of the framework is the selection of server technologies. In this context we are discussing servers which operate in software, although they may have or require a requisite hardware server to operate. From a CoP perspective we are most interested in server technologies which extend our reach into the depths of the community or breadth of accessibility. Typical server types might include Web servers, application servers, transaction servers, file servers, and database servers. In evaluating server technology consideration should be given to scalability, performance, and security. Questions to ask in determining your technology needs might include:

- Does the given server support our needed application architecture?
- If the community grows or shrinks, can the server size accordingly?
- Can the server handle the projected user, data, and throughput loads?
- Does the server provide for the levels and types of security our community requires?
- Can the server operate seamlessly with other servers?
- Can the server be replicated or expanded to support changing demand and can it handle such changes dynamically?
- Does the server facilitate ease of integration with other technical components?

Lastly, consideration should be given to selecting the appropriate database(s) for the CoP. Multiple database technologies might be required to handle the size, complexity, or diversity of a given CoP. Consideration in selecting a database should focus on its ability to handle appropriate volumes of data for the selected portal, applications, and servers. Likewise, the selected technology should be readily able to support the throughput requirements of the CoP, and unique functional characteristics such as document types, images, or other media. Questions to ask in determining your technology needs might include:

- Does the database provide the needed capacity for handling the size, type, and volume of data planned in the CoP?
- Can the database size to support expansion of CoP data volumes and application types?
- Is the level of effort required to modify the database to support additional CoP functionality acceptable?
- Are the required maintenance and operation costs acceptable?
- Are the performance characteristics of the database conducive to the desired overall CoP performance requirements?
- Does the database support the needed functionality of the CoP applications?
- Does the database provide seamless integration across applications?

One can easily see that the implementation of a project management community of practice requires an assessment of the community within the business model. Additionally, the PM CoP technical framework is a significant factor in determining the form and function of the CoP. Great consideration should be given in developing the CoP and the requisite technologies upon which it runs as they can be supportive to or in conflict with the business model.

A WELL-DESIGNED AND implemented CoP can drive both the community and business forward in achieving valuable results.

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