

BEING PIM:

Newforma Project Center Eighth Edition delivers everything PIM can be

By Jerry Laiserin

In the realm of TLAs (three-letter acronyms), PIM, or project information management, may not be the first thing that comes to mind. Newforma, originator and leading proponent of PIM, aims to change that. If one were to define what PIM is and list desiderata for an ideal software solution that addresses everything PIM is or could be, the result would, in my opinion, look very much like Newforma Project Center Eighth Edition.

In the realm of AEC (architecture, engineering and construction), business means project-centered business (PCB), where successful projects add up to successful practice. In turn, project success depends on successful management of project information. However, project information too often appears as a chaotic mélange of uncoordinated and asynchronous data and workflows across diverse and occasionally incompatible formats distributed among ad hoc collections of project partners with whom one may never have done business before and with whom one might never do business again. Newforma Project Center easily brings the calm, clarity and consistency of PIM to this chaos of unmanaged project information.

In the realm of ICT (information and communication technology) purely technical solutions are easy. What's not so easy to find are solutions that accommodate real-world business processes and embrace the individual needs of end-users. Here, too, Newforma Project Center (NPC) reduces the frictions among a firm's business processes, technology and people—of critical importance to “C-level” managers. Thus, the CEO, COO, CFO and/or CIO of any AEC PCB seeking an ICT solution to PIM should seriously consider NPC.

What is PIM?

What sorts of information are managed and/or need to be managed in project-centric AEC businesses to support project personnel in their exercise of project knowledge? Twenty years ago, when I began consulting to AEC firms regarding strategic choices about the use of technology, I observed a wide range of point solutions to various AEC information management

problems. Most such solutions had evolved as simple digital replacements for previous paper-based, manually operated processes. Because the underlying paper processes had been, of necessity, isolated or “silo’d” point solutions, so too were their digital replacements. However, AEC businesses and their ICT providers have pursued a relentless process of consolidation and integration since the early 1990s. Diverse hardware platforms and operating systems gave way to firm-wide adoption of Windows PCs in a majority of AEC practices (loyal fans of Apple and Macs can spare me their hate mail; I’m not saying anything about the percentage of Windows versus Mac in AEC or about the relative merits of the platforms; just stating an historical fact). Scores of point-solution software products coalesced to a dozen or so principal functions.

The years immediately following the millennium saw a further round of consolidation and integration among principal AEC software functions, as related clusters of activities were rolled up into larger and broader packages. One such cluster falls under the heading of PSA or professional services automation. PSA subsumes such previously stand-alone software tools as: project staffing and scheduling (often linked to HRM or human resources management); time and expense reporting; financial management and reporting; job-costing and project accounting; proposal generation; opportunity management (also known as CRM or customer/client relationship management); along with all supporting data (client/prospect information, staff expertise database, project histories, and so on). For a significant chunk of the AEC firm population, PSA functionality is provided by Deltek Vision (with BST Enterprise handling some extremely large firms, and various flavors of Intuit QuickBooks and its add-ons handling the PSA needs of the very smallest firms).

Another major cluster of AEC software functions has drifted into the orbit of BIM or building information modeling. Revolving around a primary BIM model-authoring tool such as Autodesk Revit, Bentley Architecture, Gehry DigitalProject, Graphisoft ArchiCAD, Nemetschek AllPlan or Vectorworks Designer, this BIM-related cluster subsumes such previously stand-alone principal functions as: drafting; modeling; rendering and animation; contract document production and plotting; specifications; building product selection; building analysis and simulation; quantity take-off; cost estimating; code compliance; and so on.

Because AEC firms generate lots of graphics content, most need a set of graphics production and management tools such as the Adobe Creative Suite. Because AEC firms are indeed businesses, they also need the same kind of “horizontal” application suite that every business requires—most often provided via Microsoft Office, Outlook and their related servers and server-based functions (such as Exchange and SharePoint).

Thus, what were once dozens of diverse and disjoint applications have boiled down to less than a handful of suites or clusters that, for most AEC firms, comprise major chunks of their work product and business operations. For my “favorite” firm, Hypothetical LLC, this might include Deltek for PSA, Autodesk for BIM, Adobe for graphics and Microsoft for general business applications and data back end (readers are free to substitute their own preferences when visualizing the background/context of software consolidation and integration; my analysis focuses on PIM and is not intended to endorse or recommend any PSA, BIM or other solution).

After this exegesis one may well ask, “so, what IS project information management or PIM anyway?” A simple and simple-minded answer is “**everything else.**” While PIM needs to interact with PSA and BIM, handle graphics, and deal with office documents and back-end services, PIM is not any of those things and does not substitute for them. PIM complements and supplements all the other software functions in an AEC firm, but PIM’s primary focus is on the tasks, workflows and documents of project execution. As hinted at the outset, project execution is both the cornerstone and the keystone of successful AEC practice.

What does PIM do?

Before engaging in ICT consulting for AEC, I was a project architect. Although I approved time sheets, reviewed draft invoices and occasionally wrote proposals, such PSA-like tasks were not among my primary activities. While I still occasionally drew something or critiqued a model, my core design activities entailed more in the way of mark ups, annotations and corrections to the work of others. Easily 70% of my working hours was consumed by meetings, correspondence, phone calls, site visits, reviews, approvals, submittals, transmittals, action items, follow ups, heads-ups and the like. In my subsequent observation as a consultant, the role and task allocation of project managers has not changed much.

Project architects, project engineers and project superintendents today do have more and better automated tools for creating and communicating project information than the tools I used early in my career. However, even though digitized and automated, too many project execution documents and processes remain disorganized and disjointed. For most folks, up to ten years’ post-college experience are required to become an effective project manager, a career that might last a further twenty years. Yet the disjointed and disorganized nature of project information means that **even the most successful architect or engineer may waste three or four years of his or her working life** searching for or recreating project information. That’s 15% to 20% of one’s total work time lost to inefficiency of conventional/traditional methods of project information management. Considered at the level of getting a ten-minute task done in twelve or a twelve-minute task done in fifteen, the problem of inefficient project information management doesn’t sound so painful. Considered over a lifetime as a project manager, would anyone choose wasting four years of one’s life as a career goal? Would any AEC firm management knowingly pay its project managers to waste four years of their careers?

What, then, are the desiderata for a PIM solution that effectively automates away all the painful, time-wasting and error-prone activities associated with non-integrated, uncoordinated project information?

Although most people understand that time wasted searching for project information is a huge cost, the prospective cost of moving, renaming, reformatting and/or converting the files and file formats of all existing project information would be even greater. So, the first criterion of a desirable PIM solution, in my opinion, is to make all information searchable, sortable and filterable regardless of file location or format. “Regardless” means no moving or renaming of files and no file format conversions. “All information” means any contents of any file, whether CAD (and reference files), PDF, Office, Outlook email (and attachments), graphics, BIM, finance, and

so on. The ability to filter and sort search results, whether by predetermined or user-configurable criteria also is essential.

A desirable PIM solution should arrange and make viewable all project information (and the results of all project information searches and sorts) in logical contexts, such as by project, by user, or by project-related activity (transmittals, submittals and related logs; drawing sets; markups; and so on). A PIM tool should support project communication: moving documents or sets of documents (even large files) easily within the firm as well as to and from external project participants. “Easily” means without the file size and speed limitations of conventional email or the administrative inconvenience of FTP (file transfer protocol).

Because email is such a vital component of business communication, yet such a highly unstructured source of project data, a worthy PIM solution should have specific capabilities for organizing email archives and imposing some structure on them, beyond PIM’s universal search capabilities. Among the most serious (and time-wasting) breakdowns of computer-generated project information is the total unsuitability of conventional email programs (e.g., Microsoft Outlook) to easily support project-specific saving and management of email. For many firms, the benefit obtained by solving the email filing and retrieval problem may well surpass the myriad other benefits of a PIM solution.

Beyond the abilities to search for project information and efficiently move it from user to user, a desirable PIM solution should support universal management and viewing of graphics file formats, document comparison, markup and annotation, as well as tracking of such comparisons, markups and annotations. The ability to define and assign tasks and workflows related to documents and document changes also is a key requirement for PIM. This extends to automation of repetitive and/or iterative project tasks, such as rolling over open items from one set of job meeting minutes to agenda items for the next meeting (along with managing attendee and distribution lists).

These diverse functions of a PIM solution should be accomplished by accommodating to and leveraging the functionality of a firm’s other software tools. For example, if a firm or a project uses a Microsoft SharePoint intranet or an externally hosted project extranet (say, Autodesk Buzzsaw or Constructware), then a PIM solution should be able to work with documents to and from those locations. Whichever CAD or BIM tools a firm uses to create drawings and sets of drawings, the PIM tool should help manage and integrate those drawings and sets into the overall project workflow (both internally to the firm and externally across project partners). Much the same can be said for integration with PSA applications such as Deltek Vision.

While the most robust PIM functionality logically will be confined to the internal workings of any AEC firm, significant amounts of PIM functionality will need to be made available outside the firm as well, whether for internal users operating away from the office or for access by external project partners. Current trends in mobile devices and mobile access demand that such external access be available in “app-like” form (for devices such as Androids, BlackBerries and iPhones) as well as via a web browser interface (for devices such as iPads).

What does Newforma Project Center do?

Short answer: **all of the above**. The folks who founded Newforma all are veterans of other AEC software providers, with a keen sense of the major pain points for AEC end-users of existing software solutions. Furthermore, the founders of Newforma bravely invested a significant portion of their startup capital and entrepreneurial resources into a software development methodology that was and is fanatically focused on listening to customers.

Successive releases of Newforma Project Center (which the company calls “editions”) have steadily expanded the product’s functionality beyond the original hot-button issues of Newforma’s early “Lighthouse” customers (for whom email filing and full-text indexed searching seem to have been most urgent). With the recent release of Newforma Project Center Eighth Edition, the overall product vision is now clear. Put simply, Newforma Project Center Eighth Edition, and its companion add-on products—Newforma Mobile, Newforma Contract Management, and Newforma Add-in for Revit—comprise the most comprehensive, best integrated and easiest to use suite of solutions for PIM currently on the market. Compare the PIM desiderata I outlined above to the feature/function set offered by Newforma, and the correspondence is nearly perfect. For virtually anything one might wish PIM would do, it seems Newforma already does it.

Is Newforma Project Center perfect for every firm?

No product can perfectly fulfill all needs for all users (otherwise, there would be no requirement for consultants—such as me—to help firms choose technology strategies and no need for industry analysts—such as me—to examine and critique products (;->)). However, Newforma Project Center Eighth Edition comes closest to a perfect fit for my example firm, Hypothetical LLC. Hypothetical has more than 50 total staff and is a 100% Microsoft Windows, Office, Outlook, Exchange and SharePoint shop, with the latest versions of all Microsoft server and client software. On the BIM side, Hypothetical uses the full Autodesk Revit suite for model-authoring and drawing production. For its PSA solution, Hypothetical relies on Deltek Vision. Under the hood, so to speak, Hypothetical maintains a robust server infrastructure with tightly collocated servers sharing a gigabit backbone and amply supplied with multi-gigs of RAM and multi-terabytes of disk space.

Thus, Hypothetical can exploit every available feature of the full line of Newforma products. As any firm—yours, perhaps—deviates from Hypothetical, it may give up some small amount of Newforma functionality. For example, firms using a PSA solution other than Deltek Vision will miss the *nth* degree of benefit from the close partnership and customized solutions between Newforma and Deltek. Firms using a BIM model-authoring tool other than Revit obviously won’t need and can’t benefit from the Newforma Add-in for Revit (on the other hand, firms using Revit may find the drawing and data management capabilities of the Newforma Add-in for Revit so compelling as to justify Newforma Project Center and the add-in just for the functionality of the add-in alone).

To be sure, Newforma still works and plays nicely with non-Deltek PSA solutions and non-Revit BIM tools, in many instances offering extended functionality the native solution may lack (such as the ability to take snapshots of on-screen BIM models and markup/annotate those snapshots as

part of Newforma project workflows). A firm using email other than Microsoft Outlook obviously cannot use the Project Center add-in for Outlook, but can still support Newforma's email filing operations via IMAP.

A few more nits to pick. While newly announced Newforma Contract Management does many wonderful things, it may not be the ideal choice for firms closely wedded to the AIA G-series of contract documents for this purpose (Newforma Contract Management does not populate the AIA forms). A few remote users in any firm may have issues with the partial set of Newforma Project Center functions available to remote users via browser-based access and/or the newer Newforma Mobile product. On the other hand, while not exactly the same experience as being tethered to a Windows PC in the office, the freedom and flexibility afforded by Newforma access from, say, an iPad while on the road or in the field will still be welcomed by most users in most firms.

Bottom line

For a Windows/Office-based AEC firm of sufficient size (50 or more) and sufficiently robust ICT infrastructure, Newforma Project Center is the best PIM system one can find today or is ever likely to find as commercial, off-the-shelf software (theoretically, one could build comparable functionality via intensive and extensive custom programming around a collaboration platform such as Microsoft SharePoint, but the first cost and ongoing maintenance cost of such a custom solution would be prohibitive).

If a Windows/Office-using firm also uses Microsoft Outlook/Exchange for email, so much the better. Ditto if a firm has chosen Deltek Vision for its PSA solution, and double-ditto if a firm also uses Autodesk Revit as its primary BIM tool.

Not to worry, though, if your firm cannot tick off every check box on the Newforma feature list. There is so much functionality and so many benefit-laden features packed into Newforma Project Center Eighth Edition that most users report overall product satisfaction and project success from even just a few of Newforma's many PIM capabilities. Whereas PIM was once considered a sort of "add alternate" to AEC practice, Newforma Project Center Eighth Edition makes PIM an integral part of the "base bid" for any successful design firm.



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