

INSIGHT

IT Life-Cycle Management: Will a Platform Emerge?

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IDC OPINION

Major vendors are starting to integrate their application life-cycle management (ALM) and systems management tools to close the loop between development and operations and are also starting to integrate these tools with portfolio management tools to make the link with planning. The vision — a fully integrated, automated end-to-end solution — what IDC is calling IT life-cycle management (ITLM) — sounds great, but there are many gaps today, and the major vendors are approaching the problem from very different perspectives. Highlights of our analysis are as follows:

- ☒ In the short term, vendors will focus mainly on extending their existing offerings with related components and exploiting obvious integration opportunities to add value to existing customer investments.
- ☒ In the medium term, vendors will compete more aggressively on the basis of partner ecosystems and developer networks. The lack of standards for integration between and among many of the component tools in the overall ITLM stack spells opportunity for vendors with strong partner programs that do a good job evangelizing open APIs and/or open frameworks and can effectively leverage partner solutions in their channels.
- ☒ Longer term, as more of the stack becomes integrated and automated, ITLM could become the platform for closed-loop change management and thus provide both the "governance" layer for IT controls related to compliance and the "system of record" for audits. This would go a long way to helping large IT organizations recoup some of the overhead costs they are paying today to manage compliance via manual systems.
- ☒ Integrated ITLM solutions address the needs of large and very large businesses with very large application portfolios and medium-sized and large businesses that are software-intensive (i.e., their core business relies on innovative or cost-effective IT-enabled service delivery). Financial services (banking, brokerage, insurance), the high-tech industry (software, hardware, telecom), and companies that provide transaction services (ecommerce, global airline reservation systems) are obvious candidates. Hosted offerings may be the ticket for software-intensive smaller businesses.

IN THIS INSIGHT

This IDC Insight considers what an integrated, automated, end-to-end solution for IT life-cycle management (ITLM) needs to include. We assess current gaps and take a look at what the major vendors are doing to fill them.

SITUATION OVERVIEW

Managing the Business of IT

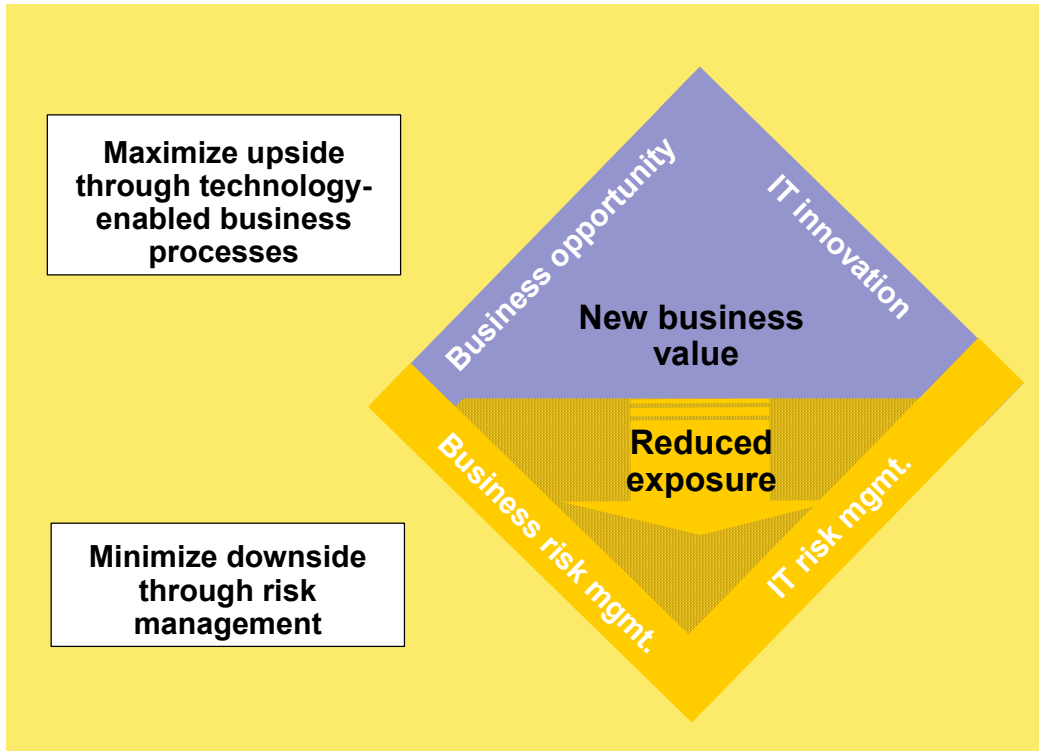
Now that the economy has begun to recover, business expansion is again the order of the day. IDC research from the spring of 2004 marked the shift in line-of-business (LOB) executive priorities for IT: the desire to cut IT costs dropped lower down the list, outranked by the need for IT to deliver reliable services, successful new applications, and cost savings (through the use of IT) to the enterprise. Now that the days of wild spending on IT are over, and now that the days of wild cost-cutting in IT are also over, companies are looking to optimize their IT spend for maximum business impact. "Getting more business value from IT" is becoming a dominant refrain.

This shift is driving renewed interest in topics such as the alignment of business with IT, IT governance, and application development as a business process. Government-mandated deadlines for achieving compliance with various regulations, including Sarbanes-Oxley, have further heightened the need for process improvement in IT. Compliance requirements essentially establish a minimum standard of performance for IT in regard to process maturity.

These two sets of pressures — the pressure to drive more innovation out of IT (with flat or only slightly increased IT budgets) and the pressure to manage compliance risk — are forcing enterprises to evaluate how they should best align IT with the business to maximize their upside for innovation and minimize downside risk (see Figure 1).

FIGURE 1

Two Goals of Effective IT/Business Alignment

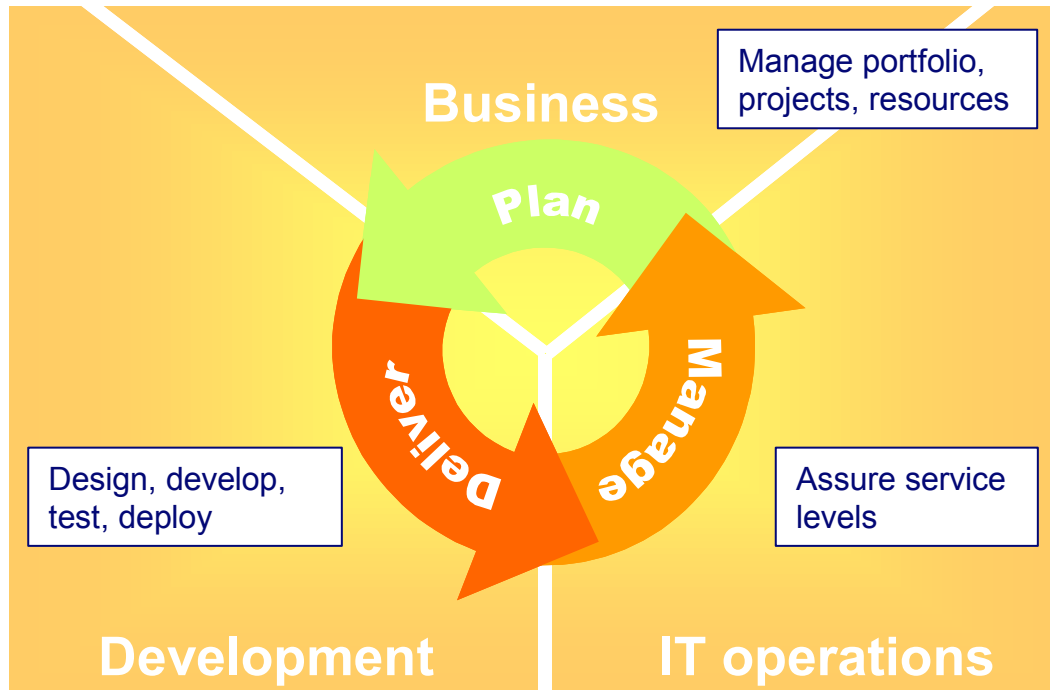


Source: IDC, 2005

From the application life-cycle perspective, IT needs to think about how it can improve its processes in three areas: planning, application development and deployment, and IT operations. Then, it needs to assess how it can better integrate these three areas for improved end-to-end IT life-cycle management (see Figure 2).

FIGURE 2

IT Life-Cycle Management: Integrating Planning, Development, and Operations



Source: IDC, 2005

Process Improvement, Process Automation

Before we can automate processes, of course, we need to define them. IT organizations are at different stages — levels of maturity — in this regard. Also, the business planning processes, the application development processes, and the IT operations processes represent three very separate domains today. There is a growing appreciation for how process improvement initiatives can tangibly impact the organization's top and bottom line and a growing interest in best practices frameworks for all of these domains (e.g., COBIT for IT governance, CMMI for software and systems engineering, and ITIL for service management). The organizations behind these frameworks (the IT Governance Institute, the Software Engineering Institute at Carnegie Mellon, and the Office of Government Commerce [OGC] in the United Kingdom, respectively) are starting to discuss how they can integrate their separate domains to support full life-cycle process improvement.

As noted previously, compliance pressures have focused significant attention on IT processes because most significant business processes are automated today, and consequently, weaknesses in IT controls create risk for the corporation overall. Compliance is essentially raising IT process improvement to corporate visibility. In

fact, CIOs at relatively "process mature" companies tell us that compliance requirements have been a big help getting the rest of the company behind the IT process improvement initiatives they have been advocating.

Regardless of whether they adopt one or more of the best practices frameworks mentioned above or roll their own, enterprises must still define the procedures they will use to implement the processes that are described in these frameworks. Once that has been done, they can turn their attention to process automation, with the goal of obtaining all of the usual benefits of automation: a consistent, repeatable process takes less effort and is much less vulnerable to human error, and it provides greater visibility into status, etc. In other words, automation lowers risk and cost, improves efficiency and productivity, and provides better management information. Automation also helps facilitate continuous process improvement.

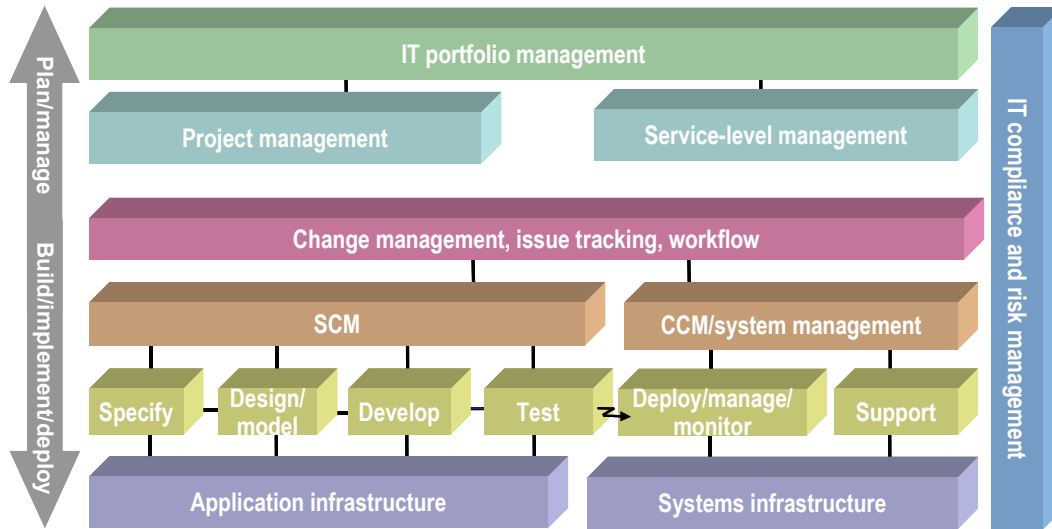
IT Life-Cycle Management: The Vision

What is IT life-cycle management? Simply put, it is the effective end-to-end management of all of the processes — from planning through application development and deployment, through application management and production operations — that IT must effectively coordinate to deliver business applications.

Assuming that the enterprise has well-defined processes for all of the activities that relate to managing an application from cradle to grave and wishes to automate these processes in an integrated system, what would a complete automated system include? Figure 3 gives a view of such a system, but readers should not be misled into thinking that a "platform" as such exists today: there are many gaps in integration that vendors are only beginning to address.

FIGURE 3

IT Life-Cycle Management Platform Components



Source: IDC, 2005

IT Project and Portfolio Management

At the top of the stack are tools such as IT project portfolio management (ITPPM) systems that facilitate joint business/IT planning and provide visibility into resource allocations and costs. These tools represent a subset of the overall project and portfolio management tools market that IDC sizes and forecasts, as they are focused specifically on IT portfolio management rather than on enterprise portfolio management.

Over the past year and a half, nearly all of the ITLM contenders have gobbled up an ITPPM solution to add to their current offerings. Mercury's acquisition of Kintana in August 2003 (at \$225 million, its largest acquisition to date) signaled the start of this trend. Subsequent acquisitions include Compuware's purchase of ChangePoint (announced April 2004, \$100 million in cash), IBM's purchase of SystemCorp (announced October 2004), CA's agreement to resell Niku (announced January 2005, perhaps a preamble to an outright acquisition?), Telelogic's acquisition (announced in April) of FocalPoint (although FocalPoint primarily provides decision support tools for project and change management, for example, it can map cost against value for requirements to help scope and prioritize investments).

Mercury gets the credit for trailblazing, and it paid the most to enter the market for ITPPM solutions (what it calls IT governance). The other vendors have taken more of a wait-and-see approach. Although Mercury's strategy has given it a first-mover advantage, the others have been able to snap up smaller less-established ITPPM

vendors at much lower cost in what has become (and remains) a buyer's market (vendors that have not picked an ITPPM play still have time). As Mercury knows, the IT governance message is one that resonates with CIOs.

Taking a portfolio view of IT investments makes a lot of sense in today's climate of constrained IT budgets, especially given the need for the enterprise to manage compliance risk: portfolio management as a science is all about managing risk. More important, taking a portfolio view of the demand on IT empowers the CIO to negotiate more effectively with LOB stakeholders. The portfolio view gives the CIO the answer to the all-important question: where are IT resources (human, capital, and operating) going? This helps the CIO get out of the role of negotiating individually with business stakeholders and into the more strategic role of facilitating enterprisewide IT planning.

We are in the early stages of integrating portfolio management into the rest of the ITLM stack. Addressing the integration gaps will make portfolio management tools more valuable in the future. For example, one of the benefits of these tools is support for scenario planning and tradeoff analysis to help IT management cope with changing business priorities. This is a very useful capability, but the portfolio view will only be trustworthy if the system has current status information for projects already underway. Similarly, the portfolio management system provides resource allocation and costing capabilities but may not be integrated with the HR system. Finally, only a small part of the IT budget is allocated today to new applications; the bulk of IT's resources are already claimed by existing systems. For the portfolio management system to help IT management plan projects that address legacy systems, including those that consolidate enterprise applications and/or sunset/replace them, the portfolio management system needs to understand the costs of these systems. Potentially, asset discovery systems that can relate network, system, and software resources to the applications that consume them in some weighted fashion may be the way to populate the portfolio management system with reliable summary information that can be used in the planning process. Ultimately, the portfolio management system may evolve into the executive dashboard for performance metrics — for both new application development and for service levels. This is a ways off, however. Today, the portfolio management system must be "fed" manually as a separate system (i.e., represents yet another silo of information).

Application Development and Deployment

Referring back to Figure 3, on the left-hand side are the many tools and technologies in use today for building and deploying new applications and maintaining existing applications. These tools include requirements management systems, change management systems (issue and defect tracking), source configuration management systems, modeling and development tools, test tools, and so on.

There are many gaps that vendors still need to address in this half of the picture. The integration between the IDE and the software configuration management system is fairly seamless today, and bug tracking systems are also more integrated into the IDE, but modeling tools still need to evolve to understand the application infrastructure, and the link between requirements capture and test plan generation needs to be more automatic. Customers are still struggling to automate more of their unit and functional testing, and extracting a set of management/status metrics from

this collection of tools that can be trusted for status and development process improvement remains a distant goal for most organizations. Vendors need to help customers leverage their ALM investments to give them better visibility into project status and health.

As vendors in the application development and deployment arena focus more attention on role-based development (providing a role-specific out-of-the-box experience), they will begin to address the needs of the business analyst more completely. We expect, for example, to see ALM tools vendors acquire or partner with vendors of visual requirements definition tools (think of them as prototyping tools that capture the business logic, not just the presentation and screen flow). Tying these into the IT-side tools (including formal requirements definition tools and test case generators) makes a lot of sense and helps bridge the gap between the business side and IT at the project definition level. IDC research continues to highlight flawed requirements as the leading cause of failure in new applications.

Systems Management

Again referring back to Figure 3, on the right-hand side are the tools and technologies we use today to assure service levels for applications in production, including change and configuration management systems, performance and availability management systems, and service desk systems that automate support functions.

From the perspective of bringing new applications into production, a wall still exists between development and operations in many IT organizations. Development and operations have different objectives and use different performance measurements, to some extent they serve different clienteles (development worries about the business stakeholder, operations supports the customer), and they use different tools. These differences create barriers, and vendors need to help the two sides collaborate better around several key activities by providing some new integration points between tools.

What are some of the activities where collaboration needs improvement? First, the operational requirements for new applications need to be captured earlier in the life cycle and communicated to the operations side so that provisioning and the transition to production go smoothly. Modeling tool vendors are starting to address this. Second, there is a lot of benefit in the development team and operations sharing performance testing tools and test scripts, both for predeployment testing and for ongoing monitoring. As the groups may not be colocated, these tools need to work well over the Web or through remote interfaces.

Third, in the problem resolution area, the two groups need tools to help them accelerate problem resolution and quickly pinpoint and identify the root cause of a failure, whether functional or load/stress related. Vendors are addressing this on the Java front with "deep dive" J2EE diagnostics tools that can trace failures back to the line of code that caused the problem. Tools that capture and coordinate log information to provide the full context of a failure — the forensics, if you will — are also available from start-up vendors.

Last but not least, vendors need to provide more integrated change management capabilities from development through deployment into production so that the ITLM stack becomes the system of record for compliance assurance.

IT Life-Cycle Management and Compliance

Today, IT organizations are pulling data from separate life-cycle tools and/or relying on their "dog-eared folders" to track and confirm changes to the production system that could impact (for example) financial reporting (and therefore represent a Sarbanes-Oxley control risk). ITLM solutions need to relieve IT organizations of the need to create and feed a parallel quasi-manual system for assuring that the required IT controls are in place and provide full traceability for all of the changes made to applications throughout the life cycle — from requirements (and supporting documentation) through design and coding, through testing and verification that the change works as intended, to validation that the intended change (and no unintended changes) were propagated correctly into production. There is a lot of value in addressing the closed-loop change management problem in an automated way: we hear (anecdotally) that enterprises are suffering a 20% hit on overall productivity from manual overlay systems to assure compliance.

Process Management

Circling back to our earlier comments about best practices and process frameworks, the goal of all of this is process improvement — making the business of IT more efficient, productive, consistent, and reliable and leveraging resources in the optimum way to maximize upside and minimize risk. At full realization of the ITLM vision, best practices are baked into all of the processes in the life cycle. Workflow and process enactment will become more important as integration between and among the tools in the ITLM stack improves. Customers will need support for multiple methodologies on the application development and deployment side to address projects of different levels of complexity; vendors are already thinking about how best to deliver these best practices, though the ability of customers to adopt the process management piece will be thwarted if the rest of the stack remains only loosely integrated. In this regard, customers that have bought separate tools from separate vendors will need the most help because they are already shouldering too much of the integration burden.

FUTURE OUTLOOK

IT Life-Cycle Management Contenders

Vendors in the application development and deployment and systems management arenas are all approaching this ITLM vision from different directions. Let's take a quick look at the contenders.

IBM

IBM, of course, is extremely well positioned to help companies tackle the whole problem, given its comprehensive product portfolio, extensive partner programs, and worldwide Global Services organization. Its acquisition of Rational in 2003 signaled its intent to provide solutions for all of the phases of the application life cycle, from development and deployment through production operations. We can expect IBM to announce new out-of-the-box integrations between its Rational application delivery products and its Tivoli systems management and application management solutions and between these product lines and its new IT portfolio management solution in the future.

IBM is the only vendor in the ITLM arena that has a strong methodology offering. Its Rational Unified Process, which addresses the processes on the left side of the ITLM diagram, is one of the most widely used methodologies today. IBM's recently announced Tivoli Unified Process supports the processes on the right side of the diagram. We can expect to see IBM merge these and extend them with processes for business/IT planning in the future (it will be even better if these are enacted, i.e., workflow enabled).

Computer Associates

CA is perhaps best known for its systems management products, but in the ALM arena, it also has a large installed base of users for its software configuration management tools on both the mainframe and distributed systems. CA has championed closed-loop change management in the past, perhaps ahead of the market's ability to adopt. With the fresh appreciation of the need for a full end-to-end audit trail as part of ensuring compliance, however, its enterprise change management message should resonate now.

As noted above, CA has signed an agreement to resell Niku's ITPPM solution, and its new Business Systems Optimization business unit will be responsible for further integrating this with CA's other IT financial and project management offerings and with its change management, asset management, and service accounting solutions. We can expect to see CA make a strong play for the market for tools to help with IT/business alignment.

Mercury Interactive

Mercury has staked out a broad territory for further expansion as it seeks to grow from its dominance of the automated software quality tools market into application performance management and IT governance. On the application development and deployment side, Mercury plays only in the test tools market, but its Test Director is something of a de facto ALM tools integration platform for its large and growing partner ecosystem. Mercury saw the opportunity to leverage its performance testing tools over on the production side of the house early on and accelerated its entry into the markets for performance and availability testing and for J2EE diagnostics through acquisitions. Similarly, its acquisition of Kintana has let it move aggressively into the ITPPM space. Mercury has done very well by targeting the pain points that arise from

gaps in integration in the overall IT life cycle, although we expect Mercury to continue its successful strategy of market-by-market dominance (application management and ITPPM being the markets it wants to dominate next).

Serena Software

Serena's acquisition of Merant last year made it the largest independent software vendor in the software configuration and change management market, with offerings spanning mainframes and distributed systems and with products that address enterprise needs as well as the needs of less formal development teams (through the popular PVCS product, now renamed Serena ChangeMan Pro).

Up to now, Serena has been entirely focused on software configuration and change management, but Serena is beginning to incorporate additional life-cycle components. Serena has made a few smaller acquisitions recently that indicate it has a grander vision in mind (e.g., in the requirements management area), and Serena also provides a solution for closed-loop change management to address the development-to-production gap.

Telelogic

Telelogic has a strong market position in systems and software engineering organizations in military/aerospace and telecom and secondarily in the automotive and financial services industries. Its DOORS requirements management system has been the strongest engine of its growth in the past, but the company understands customer needs around tool integration and it has worked hard on the integrations between DOORS, its modeling tool (TAU), and its software configuration and change management tools (Synergy).

Telelogic has set its sights on a much broader swath of the ITLM vision. Recent acquisitions include Popkin (enterprise architecture) and FocalPoint (project management tools). We expect Telelogic to remain focused on the left-hand side of the ITLM vision and expect to see it strengthen its messaging around full life-cycle support for application development and deployment.

Borland

Borland, well known for the quality of its developer tools, began to build out its product line to incorporate more of what is on the left-hand side of the ITLM picture and also fill the gap noted previously for better diagnostics for performance problems, with its acquisitions in early 2003 of TogetherSoft (modeling) and StarBase (requirements management and software configuration and change management) and its acquisition in early 2002 of Redline Software (for the OptimizeIT tools). Recently, Borland repackaged its offerings into role-based suites for developers, analysts, architects, and testers under the CoreSDP brand.

Borland's recent acquisition of services vendor TeraQuest Metrics Inc. (a CMMI expert) is an interesting move, and it signals Borland's interest in addressing the need for process management best practices that we have described previously.

Microsoft

Microsoft is also moving up the stack with its new Visual Studio Team System offering, due to ship later this year. Microsoft is also taking the role-based route, offering separate integrated SKUs for developers, architects, and testers. Significant pent-up demand exists among Microsoft's Visual Source Safe users for a higher-performance, more fully featured source configuration management tool, and Microsoft's demo at last spring's TechEd of VSTS's integrated performance testing drew applause. Microsoft has promised to "bring ALM to the masses," and we expect VSTS to take root easily among Visual Studio users who have not standardized on ALM tools from other vendors.

In regard to the full ITLM picture, Microsoft is the only vendor aside from IBM that is positioned today to go after all of the pieces, on both the application development and deployment and the systems management sides. Of course, Microsoft's view will be Windows-centric, leaving multiplatform issues to partners to address. We can expect Microsoft to stress seamless integration and ease of use in its approach to ITLM.

SAP, Oracle, and the Packaged Application Vendors

As the packaged enterprise application vendors contemplate their role in all of this, they are beginning to shape strategies that make infrastructure a bigger part of their solution footprint — to expand the footprint and extend their franchise and also to provide a platform for partners to build upon. SAP's NetWeaver has some ALM functionality baked in (partnerships with tools vendors will remain a big component of its strategy for the foreseeable future in areas such as automated software quality). Oracle's Fusion Middleware also has some ALM capabilities: Oracle has shipped Oracle Configuration Manager (OCM) as part of Developer Suite for some time and has added systems management features into its middleware stack that will be extended to its packaged applications going forward.

Where we see SAP and Oracle colliding first with ALM vendors around the ITLM vision is at the portfolio management layer. The packaged applications vendors already have project management solutions, albeit not tailored today specifically to the needs of IT. Both are investing here, however — especially Oracle. As they look for new markets for their applications, it is hard to overlook large IT organizations. IT has remained "shoeless," as the old adage about the shoemaker's children goes. Where IT governance meets corporate governance, these two companies will hold the advantage, because they will most likely be the purveyors of the "governance platform." At that point, customers still looking for ITPPM solutions, and that have invested in SAP or Oracle for packaged applications, will give these large applications providers a close look for ITPPM. By then, both vendors will likely have infused their PPM offerings with IT-specific capabilities. SAP already offers an industry-oriented PPM product called xRPM (the biggest seller in its xApp category of packaged composite applications). Oracle will soon roll out a significant upgrade to its PPM offering, and Oracle has a natural point of penetration with IT departments due to the relationships it has built as a database, tools, and middleware provider.

It is more of a stretch to envision either SAP or Oracle heading for control of the overall ITLM vision, as neither vendor currently competes as a general purpose tool vendor in many of the functional markets that make up the ITLM vision (exceptions

include Oracle's development tools and systems management software; SAP's tools are proprietary to the SAP environment). Customers of both vendors experience significant pain today managing change to their enterprise applications, but it has been difficult for general-purpose ALM tool vendors to adapt their tools to alleviate it. It is an open question just how much additional spend these vendors can capture with proprietary life-cycle tools, as heterogeneous application environments are the rule, not the exception, in their accounts.

ESSENTIAL GUIDANCE

Vendors in "pole position" — meaning they already have a strong market presence and broad solution footprint — should focus on closing the gaps in their product line and address the customer pain points that are arising today due to integration gaps. Strong partner programs will be important for ecosystem ownership and also to build a pipeline of potential technology acquisitions.

For small, innovative vendors, partnerships with the leading vendors will be key, and maybe essential in the longer term. Emerging technology companies that are innovating in areas that the larger vendors want to occupy should position themselves for acquisition.

Customers should perform a gap analysis on where they are with current ITLM solutions and where they need to be from an automation perspective. We suspect most large IT organizations (in particular, those that are in software-intensive companies) will uncover significant opportunities for optimizing their application life cycle. They should create a prioritized list of improvements and then seek vendor help to tackle the top 3.

LEARN MORE

Related Research

- ☒ *Worldwide Application Life-Cycle Management Tools 2005–2009 Forecast* (IDC #33067, March 2005)
- ☒ *Worldwide Automated Software Quality Tools 2005–2009 Forecast* (IDC #33060, March 2005)
- ☒ *Worldwide Software Configuration Management Tools 2005–2009 Forecast* (IDC #33063, March 2005)
- ☒ *IDC's Software Taxonomy, 2005* (IDC #32884, February 2005)

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