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Lean: The New Business Technology Imperative

by Connie Moore, Clay Richardson, John R. Rymer, Ted Schadler, and Dave West
for Business Process & Applications Professionals

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Lean Thinking Is Central To The Shift From IT To BT

by Connie Moore, Clay Richardson, John R. Rymer, Ted Schadler, and Dave West
with Mike Gilpin and Charles Coit

EXECUTIVE SUMMARY

Everyone wants to be lean these days, whether when stepping off a scale in the morning or reviewing the cost of running a successful business. But just how do you define "Lean" — especially in the context of business and technology? Do you think of Lean as a way to drive down costs for technology solutions? Or does Lean conjure visions of streamlined business processes that deliver ever-higher levels of productivity and quality? Or does Lean mean creating a Lean business that delivers more customer value and innovation to compete in today's Lean economy? We assembled some of our top analysts on this subject and put them to the test in a no-holds-barred roundtable discussion. The truth is that you must embrace Lean from all perspectives — people, process, and technology — and focus as much on adding value as on eliminating waste.

TABLE OF CONTENTS

NOTES & RESOURCES

This document is the result of six Forrester analysts discussing Lean as a new business imperative.

Related Research Documents

"From Information Technology To Business Technology: An Interview With George F. Colony"
September 16, 2009

"Lean Software Is Agile, Fit-To-Purpose, And Efficient"
December 12, 2008

LEAN THINKING IS ABOUT ADDING VALUE AS WELL AS REDUCING WASTE

Mike Gilpin: *Connie, what does Forrester mean when it uses the term "Lean"?*

Connie Moore: The *strategic* view of Lean is that it's a very broad management approach to doing three things:

1. Reducing waste, where waste is anything that doesn't add value for customers.

2. Creating value for customers — and doing *nothing* that doesn't truly add value.

3. Making the company more flexible so it can respond quickly to new customer needs.

Most Lean initiatives start at an operational level with a set of *tactical* initiatives and begin by reducing *waste*, where waste is anything that doesn't add value from the customer's point of view. However, unless you really understand Lean Thinking at a more strategic level, you might not reduce the right things; therefore, it's very important to take a Lean approach to reducing waste.

But if you focus only on waste, you haven't achieved the full impact of Lean. At a strategic level, Lean is about running your company with a long-term view centered on delivering value rather than just achieving short-term results. This means focusing on continuous learning and improvement, on measuring where processes really add value, on improving quality in a never-ending quest for perfection, and on rewarding people based on these metrics. Lean means focusing on teamwork and collaboration rather than having a command-and-control mentality.

Along with operational ways of reducing waste comes a management approach, a different way to run the business: The very heart of Lean Thinking is always taking a customer view of value. The customer values whatever the customer thinks is worth paying for — so if the customer won't pay for something, it is waste and should be eliminated. This customer view enables you to see waste in a very different way than if you take an inside-out view. We all encounter companies every day that are not taking a customer-centric view, that do not delight the customer — so there's plenty of room for more Lean Thinking.

Lean Thinking Drives A Focus On Quality And Flexibility

Gilpin: *Are there other core features of Lean Thinking that are important?*

Moore: Another key precept of Lean is fixing quality as soon as you see it's an issue. With Lean, there isn't a department or special group that hopefully or eventually catches quality issues somewhere down the line; everyone owns quality, meaning that as soon as there's an issue, someone fixes it right away, with teams taking full responsibility at the local level for fixing quality issues. This reflects customer centricity but is also about reducing waste, because defects and errors *are* waste.

For example, Amazon found that putting dissimilar items next to each other in its distribution warehouses reduces the likelihood of a worker pulling the wrong product to ship to a customer. Grouping dissimilar items together doesn't seem logical from an inside-out perspective, but it makes sense once you realize that the most important priority is reducing the possibility of sending the wrong product to the customer. The fact that you have a more complicated job to stock the warehouse from incoming shipments is less important; it's worth making that investment to become superior at filling orders.

Gilpin: *Connie, what about the third element of Lean: bringing greater business flexibility?*

Moore: That's another really important aspect that some other "process improvement" approaches get wrong. For example, Six Sigma aims to eliminate defects by driving down variation in processes, finding the best process and then making sure it gets used everywhere and all the time. But an excessive focus on eliminating variation can reduce flexibility and innovation, as it may mean that customers get crammed through the same process even when they don't have the same needs. Lean brings a healthier focus on process improvement that places the customer at the center. This approach avoids eliminating too much variation, thereby retaining the flexibility that is often the key to competitive differentiation, superior customer service, and product innovation.

Lean Is One Among Many Process Improvement Methodologies

Gilpin: *Clay, how do you see Lean comparing with other process improvement methodologies, not only Six Sigma but also Lean Manufacturing and Total Quality Management?*

Clay Richardson: This is a really good question, because I speak with a lot of frustrated and confused business process professionals who are trying to understand the advantages and disadvantages among the vast array of process methodologies being advocated today. Volumes of books, dissertations, and cartoon strips have been written about the competing process improvement methodologies, but here's a quick CliffsNotes view of each:

- **Lean emphasizes delivering exactly what the customer needs.** Ultimately, the Lean approach is focused on both top-down and bottom-up process improvement, which means that it requires management support from the top and frontline input from workers who do the process on a daily basis, especially those who are closer to the customer. Lean principles force everyone to be maniacally focused on eliminating waste and maximizing business value. Lean emphasizes cross-functional collaboration to identify and eliminate waste streams throughout end-to-end business processes.

- **Six Sigma emphasizes managing defects and controlling process variability.** In the Six Sigma world, a handful of "chosen ones" — known as black belts or green belts — become experts on a particular segment of a process and focus on driving out variability. In some cases, our clients have complained that Six Sigma is too "down in the weeds" to drive cross-functional

and transformational change. Some companies become so obsessed with Six Sigma — one customer called it a "methodology fetish" — that they forget that human beings interact with their processes every day and are critical contributors who can drive innovation and value for the organization.

- **Total Quality Management (TQM) emphasizes "beginning with the end in mind."** Like Lean and Six Sigma, TQM originated in the manufacturing sector, which can make it feel clumsy when organizations try to apply it to the white-collar workforce. Some companies use TQM in a service environment to ensure that workers apply quality reviews to customer deliverables. In most cases, TQM is not concerned with looking at the entire end-to-end process; it focuses primarily on outcomes and addresses improving different parts of the process that support delivering quality outcomes.

Throwing fuel on the fire of confusion, some evangelists and consultants mix and match components from the different methodologies to create new, hybrid methodologies, such as Lean Six Sigma and Lean Quality Management. The key is that all of the methodologies — including the hybrids — focus on a commitment to continuous process improvement. This means that customers looking to adopt one of these methodologies need to match the methodology to their specific needs. Ultimately, the definition of "Lean process improvement" is tailoring process roles, methodology, and tools to your specific goals and objectives.

LEAN MEANS INFORMATION TECHNOLOGY (IT) BECOMES BUSINESS TECHNOLOGY (BT)

Gilpin: *Connie, we've been talking about the overall business strategy, but for our IT clients, what does Lean really mean?*

Moore: It really means the same things, but the biggest change for IT is that when the business is truly working in a Lean way, IT folks are just part of those same cross-functional, business-led Lean initiatives. This is going way beyond just being "aligned" with the business; it means being joined at the hip with the business. This is what Forrester calls "business technology," or BT, and it brings more self-provisioning and direct business ownership of technology initiatives.[1] BT also means having that same kind of maniacal focus on customer value that drives Lean Thinking — with the business in charge, because the business really *should* be in charge of Lean initiatives at the business level.

In a BT and Lean world, the business of IT is no longer about running technology; instead, IT's focus and measurement is on the business of the *business*. Of course, when IT applies Lean Thinking to its own processes, such as software development, IT people lead the charge; however, even when IT leads, Lean means taking a customer-centric approach — focused on *internal* customers.

BT Is Also About Serving *Internal* Customers In A Lean Way

Gilpin: *Ted, it sounds like business workers and the processes they follow are central to Lean Thinking. What do I most need to know about my workforce to be a Lean IT organization focused on serving internal customers?*

Ted Schadler: Many IT organizations today struggle with the workforce having negative perceptions about IT as well as business managers feeling concerned that they aren't getting enough value for the amount of money they are spending on IT. A Lean IT organization tackles these challenges head on; whether the challenges manifest as unused licenses, underutilized applications, or dissatisfied employees, a Lean IT organization sees them as various forms of *waste* that IT needs to eliminate. Three workforce principles underpin a Lean technology-provisioning strategy for IT:

- **Doing *market research* on the workforce to find out what they need.** IT groups too often expect that all employees look like them: technology enthusiasts who look for opportunities to incorporate new technology. In fact, most people look nothing like IT professionals. To figure out what the workforce really needs, Lean IT organizations conduct quantitatively significant surveys, master analytic techniques to segment the workforce into *personas* based on technology needs and technology attitudes, and track application use and barriers to success. For Agile teams of software developers, this also means extending knowledge of workforce personas to include the needs of the individual business stakeholders working with them on cross-functional teams.

- **Using *workforce scenarios* to build business sponsorship and do problem solving.** Not every employee needs every tool. For example, while email and word processing are nearly universal, only one in four information workers in the US create presentations or use instant messaging. Lean IT organizations build workforce scenarios — a set of common technology-led activities such as "conduct internal and external electronic meetings" or "co-author documents" — to communicate with business sponsors about which tools their employees need. Equipped with these tools, IT can practice *Lean provisioning*, giving each group, as represented by its persona, just the "fit-to-purpose" capabilities it truly requires to do its job. Giving everyone a full suite of capabilities whether they need them or not is a terrible waste of resources.

- **Investing in *continuous change management*.** Most technology is unused or underutilized. For example, only one in 10 employees create templates or use pivot tables, only 4% of workers use Web conferencing on a daily basis, and only 28% of information workers (iWorkers) feel that they have high expertise in word processing.[2] To drive adoption, utilization, and satisfaction, Lean IT organizations create comprehensive programs to train reluctant users in their preferred ways, marshal natural evangelists, and identify and overcome barriers to adoption.

Moore: I agree wholeheartedly with Ted, but I think we have to be careful here. Yes, there are internal customers that IT serves, but with Lean Thinking, the *real* customer is the ultimate,

external, paying customer the business serves. Focusing on internal customers can be a trap for IT organizations that are trying to move to BT, because it can perpetuate the idea that as long as the technology is working and the users are happy, all is well with the world. In our view, IT must link its success to the success of the business, whether the business measures that by increased market share, greater customer retention, increased profitability, or some other business metric. I agree that IT should focus on serving internal customers more effectively through Lean process improvement, but it should do so with the overriding goal of helping the business achieve its results and serve the ultimate customer.

Workforce Personas Are A Powerful Tool That Helps IT/BT Implement Lean Thinking

Gilpin: *Ted, you mentioned personas. What are workforce personas, and how do they help bridge the gap between business needs and IT capabilities?*

Schadler: Personas are a powerful technique for understanding and using workforce segmentation to target technology solutions more effectively. For example, you may find technology enthusiasts who use every technology fully, "accidental iWorkers" who use IT tools but don't really care about them, and reluctant users who resist any technology. By sizing these segments, naming them, and giving them a mini life story, Lean IT organizations can personify these segments and make it easier to understand how best to serve the workers in each segment. The result is a simple way to talk about different employee groups in ways that the individuals within each group would recognize and appreciate.

It sounds easy, but creating good and meaningful personas requires sophisticated, quantitative techniques to create real segments, qualitative skills to conduct focus groups of each segment, and storytelling skills to bring each persona to life. The result is a small number (usually four to six in a large company) of workforce personas.

A smart, Lean IT organization will develop personas as a simple way to talk within IT and to business sponsors about how the workforce uses (or doesn't use) technology. These personas are also a powerful tool that can help IT save money on software licenses by practicing *Lean provisioning*.

Gilpin: *Clay, I've heard you talk about personas, too, in the context of business process management, or BPM. Is that a similar idea to what Ted is talking about?*

Richardson: One of BPM's key objectives is to identify all of the roles and interactions required to complete an end-to-end process. Today, companies implementing BPM often spend significant time documenting process roles and significant cost customizing the user interface and experience for each role, which is similar to the "personas" Ted was talking about.

A few leading BPM vendors — such as Global 360 — are beginning to bundle tailored user experiences based on "process personas." For example, if you are a supervisor, in most cases there

are specific interactions and experiences you need to complete your tasks in the process; these BPM products have already provisioned the core elements, so the products will not require significant development effort from IT.

In this way, the *Lean provisioning* Ted was talking about will also become a key ingredient for Lean process improvement; working within the Lean provisioning framework, BPM initiatives will be able to match capabilities and user experiences with specific roles or personas.

Lean Means IT/BT Delivers "Fit-To-Purpose" Solutions

Gilpin: *Clay, you also like the term "fit-to-purpose." What do you mean by that term, and how does it fit into Lean Thinking for you?*

Richardson: Yes, I love this term because it speaks directly to one of the biggest challenges we see on process improvement initiatives: mismatched roles, methodologies, and tools. "Fit-to-purpose" also provides a foundation for BPM to improve its image by delivering leaner, more-targeted solutions, as opposed to a more bloated approach to improving business processes.

The fit-to-purpose concept is essential to Lean principles and Lean Thinking. The Lean approach forces companies to first evaluate and understand what creates value for the organization — in other words, to define the organization's *purpose* and key objectives. Then, Lean pushes companies to *fit* the solutions and resources needed to support delivering value and accomplishing key objectives.

Gilpin: *But Ted, how can businesses deliver fit-to-purpose applications to the entire workforce? Isn't "fit-to-purpose for everybody" an oxymoron?*

Schadler: This is where those workforce personas come in. Once IT understands the true needs of the workers it is serving — and the way those needs fit into the business strategy — it has a head start on configuring workforce application solutions to fit the needs of each segment. This can save a lot of money on licenses that would otherwise have been wasted, and workers will become proficient more quickly because they have a focused set of capabilities that matches their needs.

Dynamic Business Applications Are "Fit-To-Purpose"

Gilpin: *John, I've heard you talk about "fit-to-purpose," too, starting a couple of years ago in the context of Dynamic Business Applications. What are Dynamic Business Applications, and how do they relate to the "fit-to-purpose" concept?*

John R. Rymer: The term "Dynamic Business Applications" describes a new generation of applications that are "designed for people" and "built for continuous change." This harks back to the third principle of Lean that Connie was talking about earlier, regarding flexibility.

- **Design for people.** The call to "design for people" asks developers to stop designing user interfaces as if every application were designed to collect information to feed corporate reports. We all know those enterprise apps that have complex, multitab forms. They drive us nuts because they impose on our work rather than help us do our work. The alternative is user experiences that are tailored to the ways people work and that can be customized to fit the ways individuals create information, consume information, collaborate, prioritize their activities, and so on.

- **Build for continuous change.** The call to "build for continuous change" argues that we must design software to *change*, primarily by designing "flex points" into its structure. Flex points make it easier to make certain kinds of changes, such as adjusting changing lending practices when credit markets change. Which flex points your business needs depends on the types of business change the business will encounter. Need to change work processes? You need flex points that let you do so. Need to change business rules? You need appropriate flex points. The resulting architecture and design will fit the organization's needs to accommodate change, which is really just another way to get fit-to-purpose systems.

But there's more. We're finding that organizations pursuing "designing for people and building for continuous change" tend to be very sparing in their installations of software. They've found as a practical matter that compact software installations are easier to manage and change than big, complex software installations. This makes sense: More software means more code to recompile or reconfigure, more dependencies, and more things that can go wrong when making changes.

Moore: I believe that Lean Thinking reinforces the sparse approach to software installations that John describes. For example, Lean Thinking heavily discourages a software-first approach; Lean looks at the overall process (including the manual steps) and never leads with a technology solution. One of Lean's truisms is that software can hide a lot of waste, so organizations should be careful how they deploy it. Lean also advocates visual cues and controls that make it easier to see the status of work. This approach fits nicely with the *design for people* precept that encourages solutions that appeal to all our human senses, including visualization, sound, and even touch.

LEAN THINKING TRANSFORMS APPLICATION DEVELOPMENT AND DELIVERY

Gilpin: *Dave, John just explained one aspect of Lean that matters to application development organizations: the architecture of the applications. How else does Lean apply to application development organizations and their relationship with the business?*

Dave West: John talked about how organizations are designing their applications to be Lean, but we are also seeing application development professionals changing the *way* they build software and work with the business. Lean Thinking influences the way teams apply their development process. Perhaps the biggest trend is the move to Agile methods. This adoption may be part of a

large-scale organizationwide process change labeled Lean, or it may be done as a tactical approach to improve delivery cycles, deliver higher-quality software, and work more closely with the business, particularly by adding business value. This ground-up adoption of Agile methods is by far the most popular adoption scenario, but interestingly, as these organizations later scale Agile to many teams and many releases, it starts to become more like a process change initiative focused on using this approach to measure, report, and plan all of IT. In these cases, organizations are looking to Lean to help solve the problems of getting to Agile.

Gilpin: *And how does this change application development teams' relationship with the business?*

West: We are seeing fundamental shifts from contractual, adversarial relationships with the business to ones that are more collaborative. This happens more as a result of delivering software more frequently than as a grand social media or collaboration strategy. Delivering working software early shortens the feedback loop between business and IT, allowing them to collaborate more effectively.

Gilpin: *Dave, you mentioned the Forrester theme around Lean Software. Are there particular technology or process approaches that facilitate Lean Software more than others do?*

West: Much of what we talked about already — improved delivery cycles, higher quality, business connection, and value — is fundamentally about teams adopting a different way of delivering software, which has been labeled "Agile." Agile software is definitely an embodiment of Lean: Principles of the Agile Manifesto could have been taken from *The Machine That Changed The World* or many of the Lean books that people read today.

Agile methods are at the heart of process change, and we are seeing the result in the way people build software, whether the changes involve continuous integration and build, test-driven development (TDD), the use of wikis for documentation, or software deployment. When shops need to deploy software more frequently, rigid, complex, and difficult-to-execute processes have to disappear. The aim of all these technologies and practices is eliminating waste from a project — a key tenet of Lean Software.[3]

Lean Application Development Is About More Than Just Agile Methods

Gilpin: *Does Lean for app dev just mean Agile methods, or is there more to it than that?*

West: The motivations for adopting Agile methods were not necessarily Lean, although if you were to read the Agile Manifesto, the Agile tenets look quite Lean. The focus for Agile is really about reducing waste: Continuous integration and build reduces waste, TDD reduces waste, better collaboration reduces waste, and so on. But reducing waste is only half of the Lean picture: To be Lean in the fullest sense, organizations must also focus on adding value.

Furthermore, Agile is particularly useful in situations where there are many unknowns, whether these consist of unknown requirements or technical unknowns. During the life of a product, system, or business process, as the number of unknowns reduces, Agile becomes less of a focus, but Lean can still apply. For instance, app dev shops may end up streamlining their bug defect tracking process or perhaps integrating the defect resolution process with their development process itself by shipping a fix to the person who found the bug so that person can test it. Lean means a growing emphasis on using automation, whether Agile or non-Agile, to add real value later on in the life cycle.

Richardson: When we talk about applying Lean to BPM, many clients assume we mean using Agile development to reduce development costs. Really, Lean process improvement requires BPM development teams to adopt a new mindset when it comes to interacting with the business and delivering process solutions. First and foremost, it means that organizations need to capture and prioritize process requirements from the people who add value in the organization.

Once equipped with a Lean mindset, BPM teams should bring in Lean tools that foster collaboration at every level of the organization. One example of this is "process wikis" — such as Lombardi Software's Blueprint — which combines easy-to-use process modeling capabilities with a wiki platform in order to capture, manage, and disseminate knowledge about an organization's business processes. Process wikis allow everyone to provide feedback and guidance on the business process — not just managers and executives who might not have a true picture of how the real process executes on a day-to-day basis.

Lean Application Delivery Requires Integrated, Transparent Project Metrics

Gilpin: *We currently measure progress for application delivery projects in terms of "on time," "on budget," and quality. What does Lean do to our measurement approach?*

West: One of the single most important aspects of Lean is transparency. The old adage of "you can't improve something if you can't measure it" holds true in Lean, too. And "on time," "on budget," and quality are all important measures that are still relevant in the Lean model. But having visibility through integrated measurement is where Lean differentiates. For example, what impact can reducing quality have on time-to-market? What are the implications of building stability as it applies to requirements? Software tool vendors are noticing this trend as well, and they are reacting by integrating data warehouses with development life-cycle tools to enable integrated dashboards that have the ability to link data about development artifacts.

As we've discussed before with Lean, added value is an important aspect. In the context of measurement, Lean means an increased focus on capturing metrics around value, then folding these value metrics into an overall dashboard. The fundamental point is: If you don't have measures, you can't do Lean. In adopting Lean, organizations move from a stage-gate, artifact-centric process to closed loop feedback where teams present data about their actions and projects move through the

pipeline based on data regarding quality, stability, scope, and value — all requiring app dev shops to have visibility via accurate measurements.

LEAN THINKING RESHAPES YOUR SOLUTION PROVISIONING STRATEGY

Gilpin: *What strategies do you recommend for making my portfolio of IT assets leaner and more fit-to-purpose?*

Rymer: Don't buy and install more stuff than you need. When you evaluate software for any given project, make brevity and compactness a consideration. Too many clients spend far too much time and effort trying to find the products with the most features. Lean shops look for just enough, no more.

Moore: I like the Goldilocks approach: not too big, not too small, but just right. That's why cloud computing holds so much promise.

Richardson: The key here is to match the tool to the job at hand. In BPM, this means evaluating the types of processes you need to improve and then determining which tool is best matched to support those particular types.

At Forrester, we categorize business processes into three segments: human-centric, integration-centric, and document-centric. No single vendor currently offers a solution that covers all three areas equally well, which means that you need to identify the vendor that best covers the area that's most critical to you. This might lead to your organization adopting three different BPM suites (BPMSes); that's OK as long as each one fits the particular challenge you need it to address.

Practice Lean Process Improvement, Too

Gilpin: *What are best practices and steps I can take to right-size my company's process improvement initiative?*

Richardson: During the first half of 2009, I shared with our clients a lot of best practices and trends regarding Lean process improvement. The feedback I received was: "Clay, this is great. We understand we need to get Lean, but can you provide us with a step-by-step game plan to get there?"

During the past three months, we pulled together our best practices into a Lean process improvement tool kit to help companies build actionable game plans for right-sizing their BPM initiative. There are three essential steps to developing your Lean process improvement game plan:

- **Measure your process improvement initiative's fit-to-purpose.** Most companies don't know if their BPM initiative is Lean, bloated, or even anemic. The first step to right-sizing your BPM initiative is assessing where your process improvement initiative fits on the scale. By evaluating

your organization's purpose and current approach to process improvement, you can get a sense of whether you're wasting money and/or opportunity.

· **Identify necessary role, methodology, and technology adjustments.** Once you have a sense of whether your initiative is bloated or anemic, you need to map out the changes necessary to get your project to the right size, matching these changes to the resources you'll need to accomplish your objectives for process improvement.

· **Tailor process best practices and industry standards to meet your objectives.** Most companies assume that if they adopt process best practices, industry standards, or a specific process improvement methodology, they're out of the woods with right-sizing their BPM initiative. In order to maximize value, organizations must go one step further, customizing selected standards to fit their specific needs and objectives for process improvement.

Don't Miss The Opportunity To Get Lean

Gilpin: *Any last succinct words of advice to businesses focusing on Lean?*

West*:* Fundamentally, we're seeing organizations completely re-evaluating how they're doing IT in terms of how it fits in the organization, how they measure, how they deliver, how they manage staff, and how they use technology. John sometimes speaks of Lean Software as a "developer revolution," and that's what we often see as the "thin end of the wedge" of changes for IT. But like any revolution, the developers get onboard, the business likes the results, and then everyone else follows. All this rethinking is an opportunity for IT to change the way it's measured, harness new technology and methods (cloud, virtualization, open source, Agile methods, improved build management and testing processes, etc.) to bring business value to the development cycle. It also offers IT the opportunity not only to build software *well*, *quickly*, and *cheaply* but also to build the *right* software, which is crucial to Lean adoption. While some organizations think this may be a fad — and indeed some of the terminology might be — the underlying message is very important and lasting.

Moore: Don't get so caught up in eliminating waste that you forget to create value and increase flexibility. The three *must* go hand in hand.

ENDNOTES

[1] For the past four years, Forrester Research CEO George F. Colony has been preaching the gospel of converting information technologists into businesspeople. The number of converts has been lower than we hoped, but a generational change in IT and business leadership is beginning to force the issue. George calls this concept "moving from information technology to business technology — or IT to BT." At its heart, the message is for IT to measure itself using business metrics that matter to the COO, CEO, and board of directors, instead of assessing its success with a technology yardstick, such as network availability or server uptime. But the IT-to-BT message goes beyond the need for action by CIOs. CEOs and corporate

directors, too, can no longer ignore IT issues by relegating them to the CIO. Connie Moore, a research director serving business process professionals, caught up with George while they were both preparing for Forrester's Business Technology Forum 2009. His message is nothing less than a clarion call for IT and business execs to start thinking and acting in a profoundly different way. See the September 16, 2009, "From Information Technology To Business Technology: An Interview With George F. Colony" report.

2 Forrester surveyed 2,001 US information workers at organizations larger than 100 employees in April 2009 to benchmark their technology adoption, use, and attitudes. This survey includes data on device adoption, use of productivity and collaboration tools, IT and application satisfaction, and barriers to success. The data can be cross-tabbed by organization size, profession, industry group, gender, and age, among other things, to show the details for these different groups. Source: Workforce Technographics® US Benchmark Survey, Q2 2009.

3 Bloat kills. Whether it's excessive complexity in the application, its underlying platform or architecture, or the process used to deliver it, overloaded platform software and heavy processes impede delivery of the solutions the business demands. Yet most enterprises are awash in application suites, development tools, processes, and platforms that have grown so large they no longer resemble the clean and clear vision of their original purpose. Lean Software is emerging as the antidote to bloatware, enabling architects and developers to rapidly assemble business solutions that deliver "just in time" the software capabilities the business requires both today and tomorrow. The trend toward Lean Software has been building for years, but the worldwide recession is accelerating it. All application development professionals should know why and how to incorporate Lean Software into their software strategies for the future. See the December 12, 2008, "Lean Software Is Agile, Fit-To-Purpose, And Efficient" report.

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