A Forrester Consulting Thought Leadership Paper Commissioned By Hewlett Packard

Clearing Your Path To Modern Applications And Business Agility

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FORRESTER®

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Executive Summary

In January 2010, Hewlett Packard (HP) commissioned Forrester Consulting to survey firms around the globe about their plans for modernization of applications, technology platforms, and software development life cycles (SDLCs). The survey targeted IT leaders from more than 200 companies in North America, Western Europe, and Asia Pacific.

Key Findings

Forrester's study yielded three key findings:

- **Agility, innovation, and cost reduction are driving modernization activity.** Overly complex and heterogeneous applications, cumbersome end-to-end SDLC processes, and "difficult to change" legacy applications are the top three causes of low application development productivity. IT leaders are laser focused on modernization and rationalization activity that will reduce the size, cost, and complexity of their application portfolios to increase productivity and enable business agility.
- **Obsolete technology, poor functionality, and unstable applications abound.** IT leaders cite a number of reasons applications should be retired — 53% noted obsolete technology, 50% cited that applications no longer meet business requirements, 41% noted difficulty in maintaining applications, and 41% noted that applications are "wholly or partially redundant with other applications." Business users who "refuse to let go of obsolete applications" are cited as the No. 1 inhibitor to the timely retirement of obsolete applications. Ironically, business users may be cannibalizing their innovation budgets because they refuse to let go of obsolete applications.
- **Modernizing SDLC tools, processes, and portfolio techniques yields drastic gains.** IT leaders cited the activities that yield the highest productivity gains: 74% cited SDLC tool modernization such as application life cycle management (ALM); 70% cited SDLC process modernization such as "Lean" and "Agile" techniques; and 65% cited formal application portfolio management programs as a source of significant productivity improvements.

The key findings of the survey underscore a tipping point — status quo is no longer acceptable. Bloated portfolios and obsolete applications, technology, and SDLC processes are stifling business agility. As a result, IT leaders no longer view modernization as a "necessary evil," but rather as the path to agility and innovation.

Key Questions For IT Leaders

These study results reveal questions that IT leaders around the world should consider:

- Are you running in modernization circles, stuck with yesterday's SDLC tools and applications, and unable to move forward from yesterday's inefficient SDLC techniques?
- What percentage of your activity and resources is wasted by obsolete processes, applications, and technology — activities and resources that could otherwise staff new projects and enable innovation and agility?
- How long will it be before your business peers seek external help because you haven't moved your organization toward modern and agile applications, technologies, and SDLC?

Modern, Agile Application Portfolios Elude Us

Business leaders expect IT to innovate at a pace that will support business plans, but IT results lag business expectations considerably in most firms.

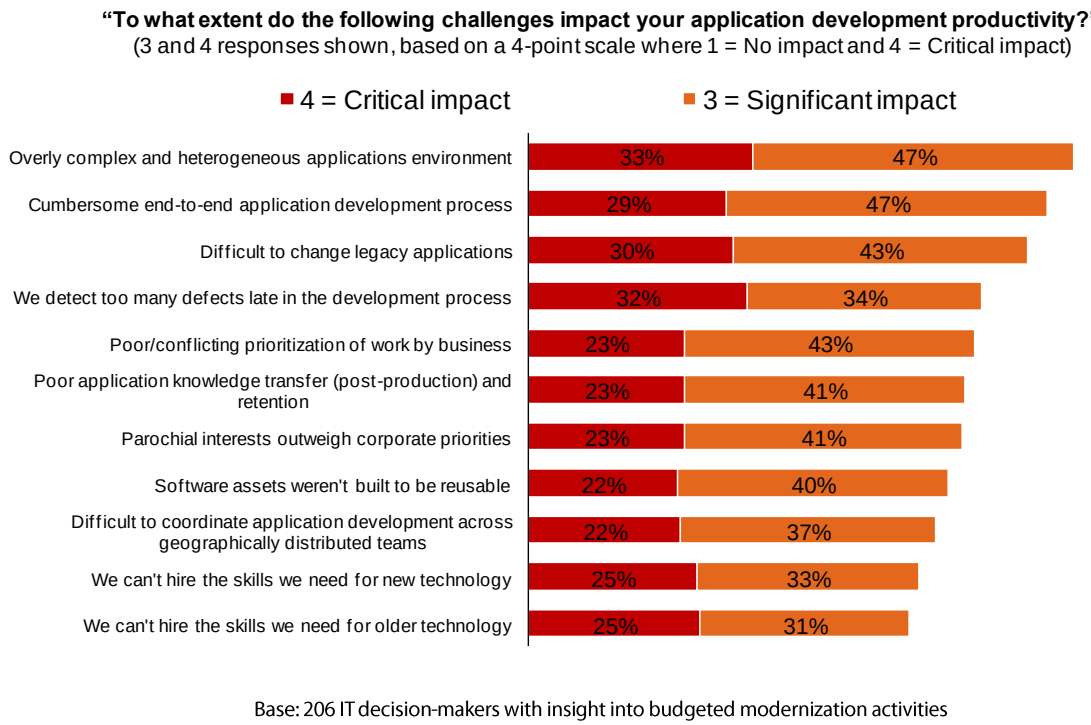
A Three-Headed Beast Blocks Our Path To Business Agility

IT organizations have reached a point where they are frozen on the path to agility and innovation by an IT version of Cerberus — the three-headed dog of myth that guarded the gates of Hades. The legend of Cerberus is an appropriate metaphor for today's application environments — 40-plus years of building, patching, repairing, and force-fitting applications to successive waves of newer technology has placed IT leaders in our own private form of IT-Hades. The gates are guarded by a beast that blocks the path to business agility via more agile application environments. The three heads of IT-Cerberus are:

- **Obsolete technology platforms are overly complex and costly.** Overly heterogeneous data centers are a drain on the revenues of mature organizations, with 80% of IT decision-makers surveyed reporting this as having significant or critical impact on application development productivity (see Figure 1). Data and functionality are scattered across redundant/overlapping technology stacks, acting as a multiplier on the number and variety of skills, software licenses, and other expense items that firms must maintain to keep legacy platforms and applications operational.
- **Outdated applications bloat the portfolio and no longer meet business needs.** Overly complex, heterogeneous applications that have been threaded together with complex point-to-point integration are too cumbersome, complex, and costly to change at the pace required by today's business leaders. Applications based on obsolete technology, and those blatantly not meeting business needs are at the top of the list to retire (see Figure 2). Yet application retirement activity simply doesn't keep pace with obsolescence: IT departments must balance this work with other development priorities and spend too much time and effort wrangling with the business to get them to let go of the very applications most needing to be retired (see Figure 3).
- **Cumbersome, outdated SDLC processes and tools stifle productivity.** Improving SDLC processes was among the most popular pursuits by organizations surveyed: 51% currently had such an initiative underway. We'll never be agile enough using yesterday's techniques to build tomorrow's applications — software development productivity can't possibly make the necessary leap forward without a radical restructuring and modernization of the tools and processes. Simply put, modern agile application development demands modern agile tools and processes.

Figure 1

Complex, Cumbersome Development Processes Smother Productivity

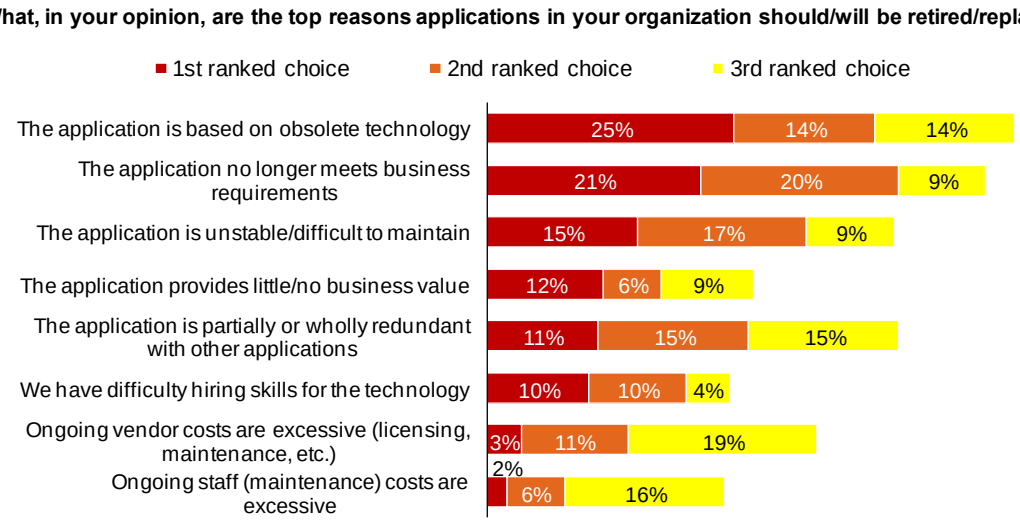


Base: 206 IT decision-makers with insight into budgeted modernization activities

Source: A commissioned study conducted by Forrester Consulting on behalf of HP, February 2010

Figure 2

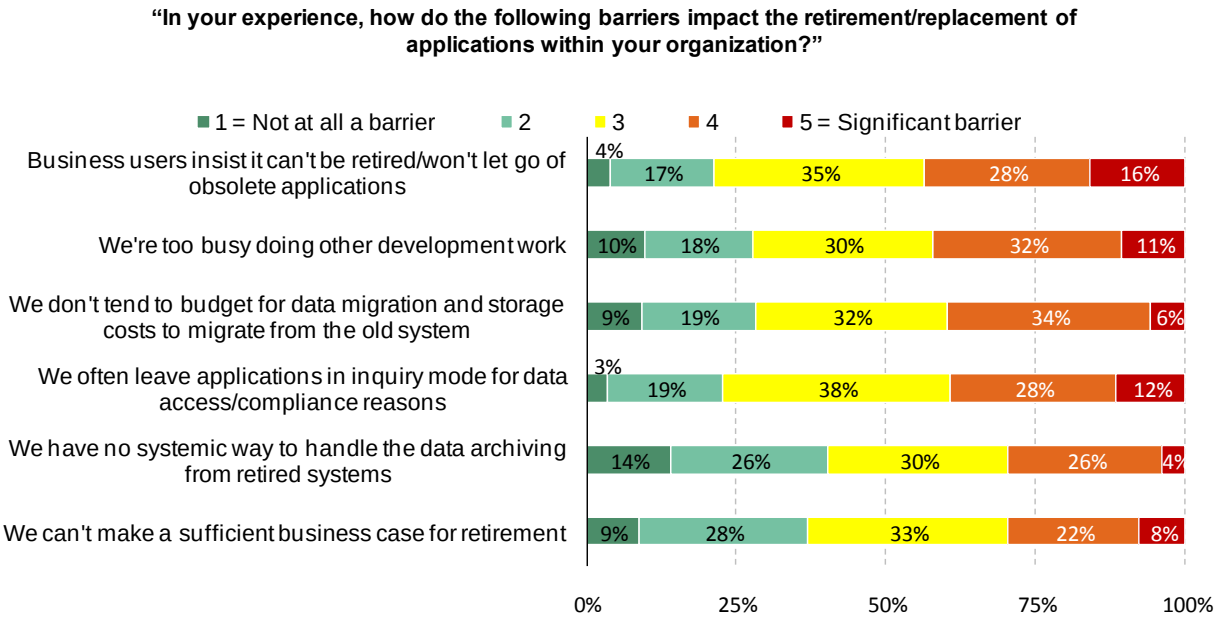
Obsolete Technology And Applications Don't Meet Business Requirements



Base: 206 IT decision-makers with insight into budgeted modernization activities

Source: A commissioned study conducted by Forrester Consulting on behalf of HP, February 2010

Figure 3
Obsolete Applications Aren't Retired Often Enough, Bloating The Portfolio



Base: 206 IT decision-makers with insight into budgeted modernization activities

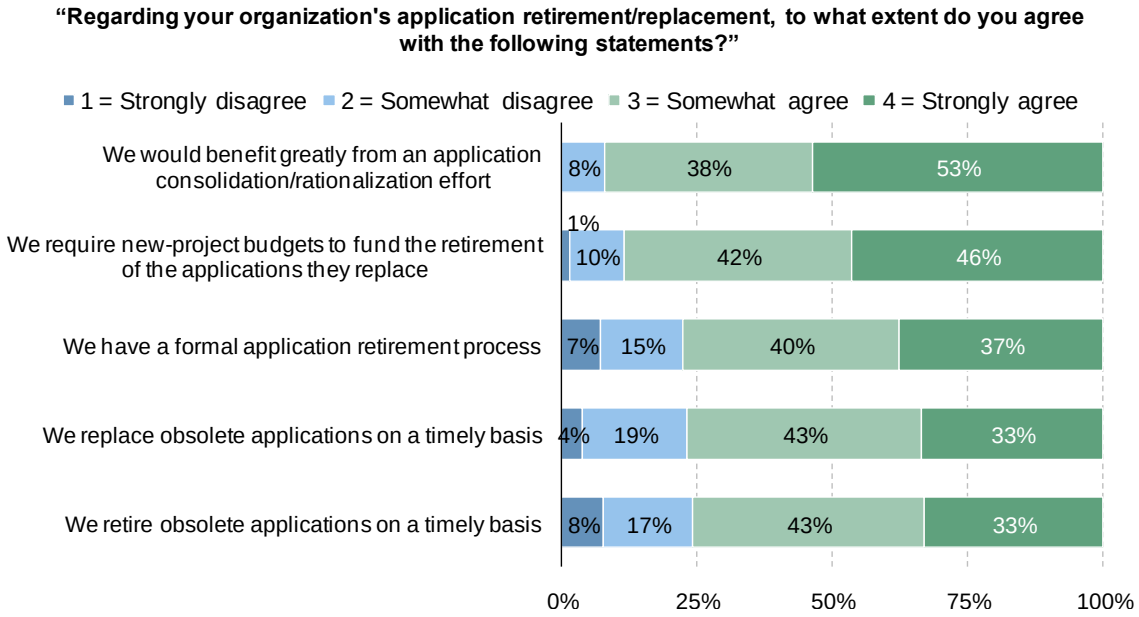
Source: A commissioned study conducted by Forrester Consulting on behalf of HP, February 2010

We Need To Consolidate And Rationalize Our Applications

It's clear from their responses that the IT organizations surveyed attempt to keep a clean application environment — nearly half strongly agree that they "require project budgets to fund the retirement of applications they replace," and 37% of firms surveyed strongly agree that they "have a formal application retirement process in place."

But the efforts clearly fall short — only one-third strongly agree that "they replace and retire obsolete applications on a timely basis." More telling is the fact that 91% of respondents strongly agree or somewhat agree that they "would benefit from an application consolidation/rationalization effort" (see Figure 4).

Figure 4
Most Firms Would Benefit From An Application Consolidation Effort



Base: 206 IT decision-makers with insight into budgeted modernization activities

Source: A commissioned study conducted by Forrester Consulting on behalf of HP, February 2010

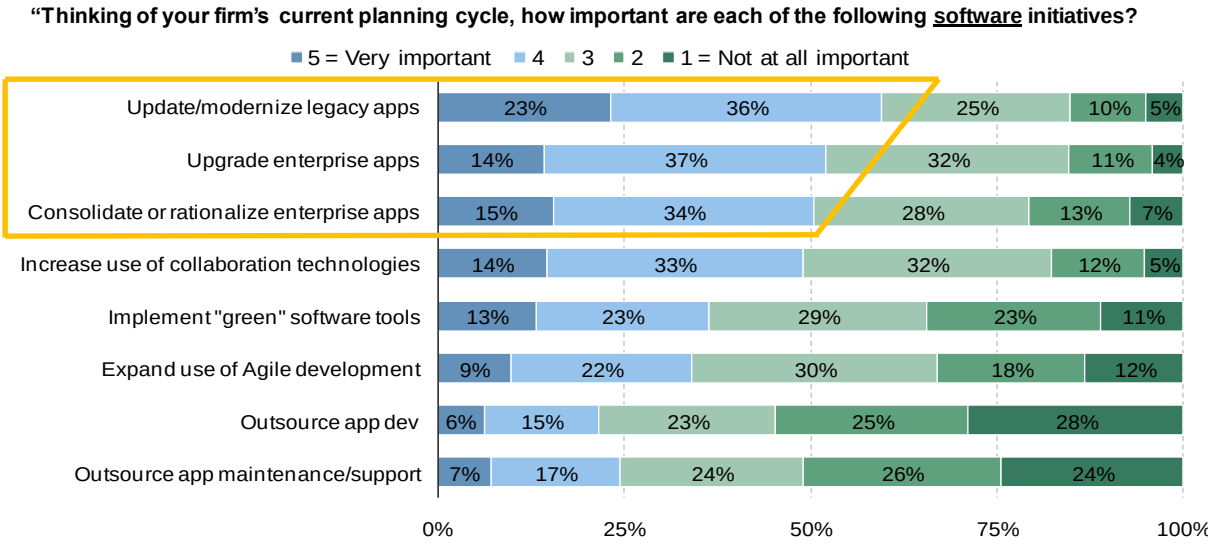
IT Execs Are Driven To Change Status Quo

The three heads of IT-Cerberus have created an untenable situation for IT leaders — the cost, complexity, and poor suitability of applications to business needs have IT leaders preparing to battle the beast in a three-pronged attack.

By Focusing On Bloated Application Portfolios . . .

Data from Forrester Research annual surveys indicates that the adverse impacts of the beast have taken their toll and are prompting IT executives to shift their attention from being overly focused on new projects to taking a more balanced approach that will address the looming problem. According to a Q4 2008 Forrester Research survey, when asked to name their top three software priorities, IT leaders cited: 1) update/modernize legacy applications; 2) upgrade enterprise applications; and 3) consolidate enterprise applications (see Figure 5).

Figure 5
IT Leaders Have A New Sense Of Urgency For Application Modernization



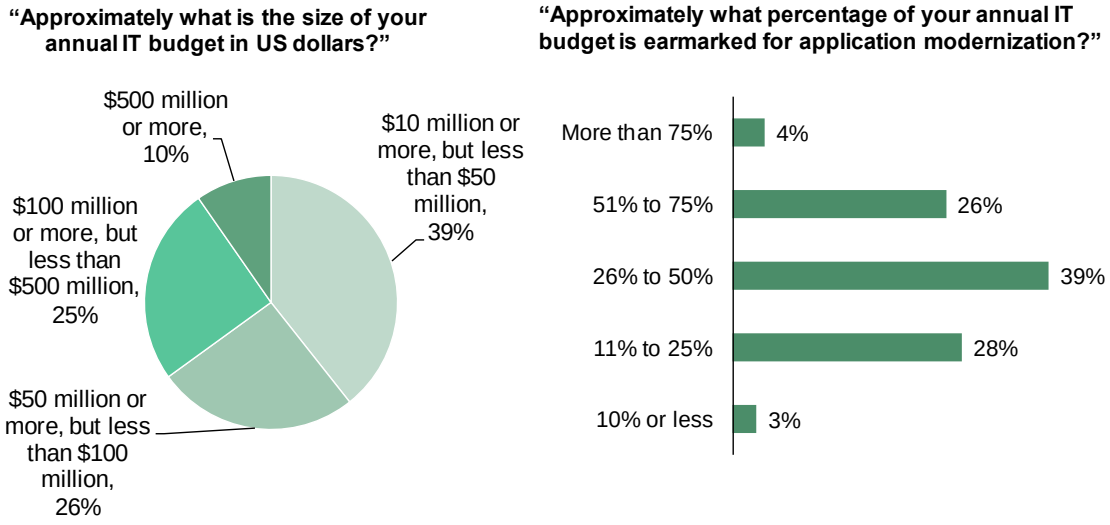
Base: 2,227 custom software decision-makers at North American and European enterprises and SMBs
(percentages may not total 100 because of rounding)

Source: Forrester Research, Inc. Enterprise And SMB Software Survey, North America And Europe, Q4 2008

And Dedicating Funding To Modernization . . .

Funding levels for modernization are often problematic — business leaders want to minimize expenditures on the assets they already own to free as much as possible for new innovation. However, the good news in this study is that IT executives have thrown away the old handbook and drawn up plans to better fund modernization efforts — 69% of respondents have earmarked more than 25% of their IT budgets for modernization, while one-third of survey respondents will dedicate 51% or more of their IT budgets for modernization (see Figure 6).

Figure 6
Modernization Plans As A Percentage of IT Budget



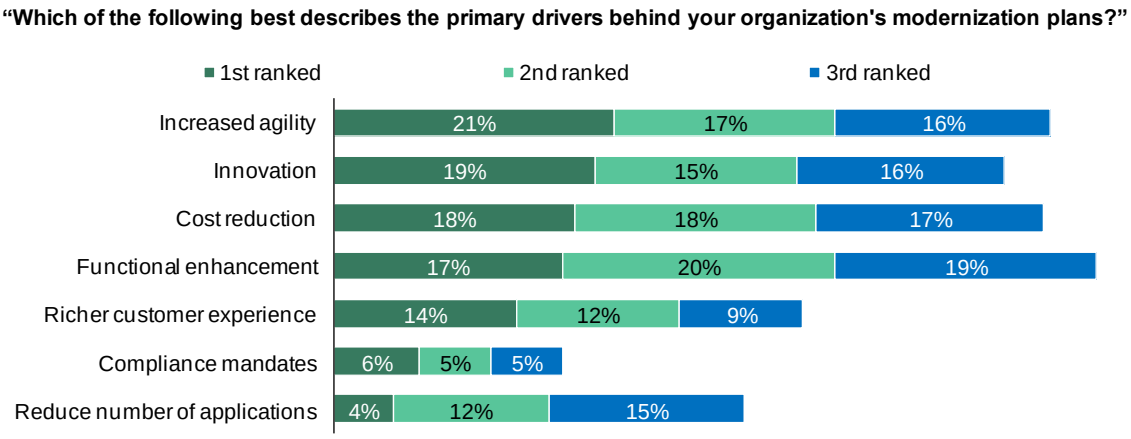
Base: 206 IT decision-makers with insight into budgeted modernization activities

Source: A commissioned study conducted by Forrester Consulting on behalf of HP, February 2010

To Reduce Costs And Increase Agility And Innovation

IT leaders are keenly aware that their staffs are not as productive as they need to be — agility is a key theme that repeats itself throughout the study results. In fact, increased agility is ranked number one by more IT leaders than any other driver to modernization, at 21%. Another 17% ranked agility as their second choice (see Figure 7). Innovation, cost reduction, and functional enhancement share agility's importance to IT leaders — at very similar levels.

Figure 7
Agility, Innovation, And Cost Reduction Are Driving Demand For Modernization



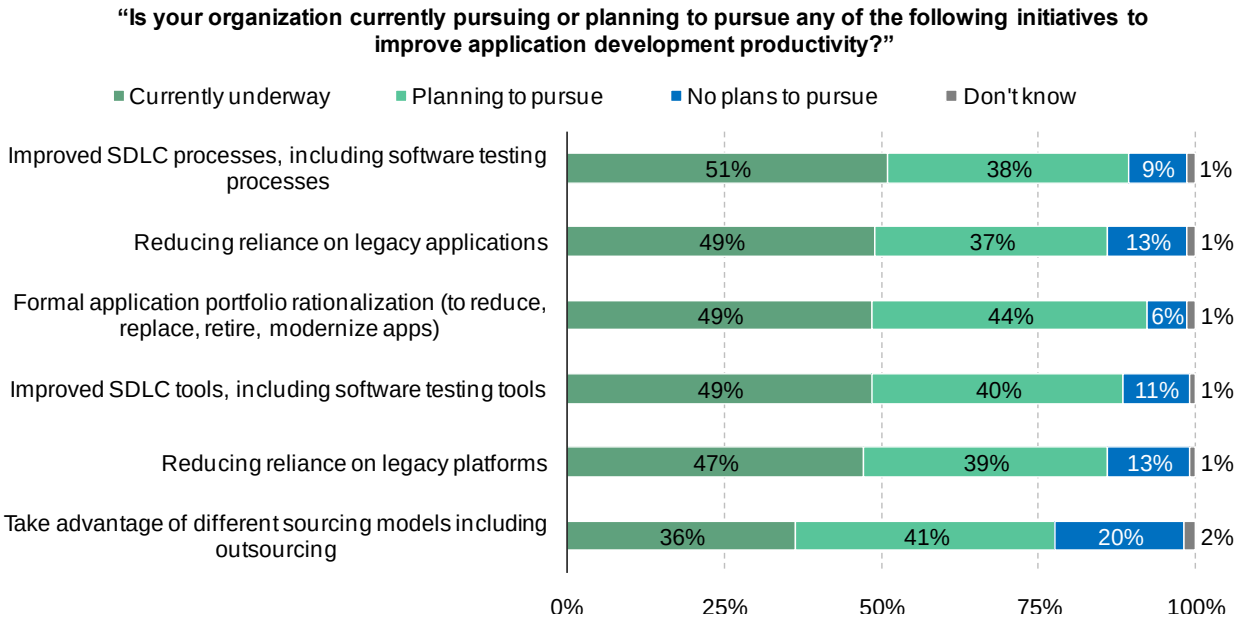
Base: 206 IT decision makers with insight into budgeted modernization activities

Source: A commissioned study conducted by Forrester Consulting on behalf of HP, February 2010

Modernize Your Tools And Techniques To Win

The resolve on the part of IT executives to reduce the bloat, complexity, and cost of lights-on IT has sparked plans and activities that are already yielding impressive results. How are leading firms attacking or planning to attack the beast and win? Forty-seven percent are reducing their reliance on legacy platforms, and an additional 39% plan to reduce this reliance. Forty-nine percent of respondents are improving their SDLC tools, and an additional 40% are planning to do the same. Forty-nine percent of respondents are rationalizing their application portfolios, and another 44% plan to rationalize. Forty-nine percent of respondents are reducing their reliance on legacy applications, and another 37% plan to do the same. But the most prevalent technique is the improvement of SDLC processes, including testing processes — 51% have already begun to pursue this initiative, and an additional 38% plan to improve their SDLC processes (see Figure 8).

Figure 8
Productivity Initiatives Focus On SDLC, Legacy, and Rationalization



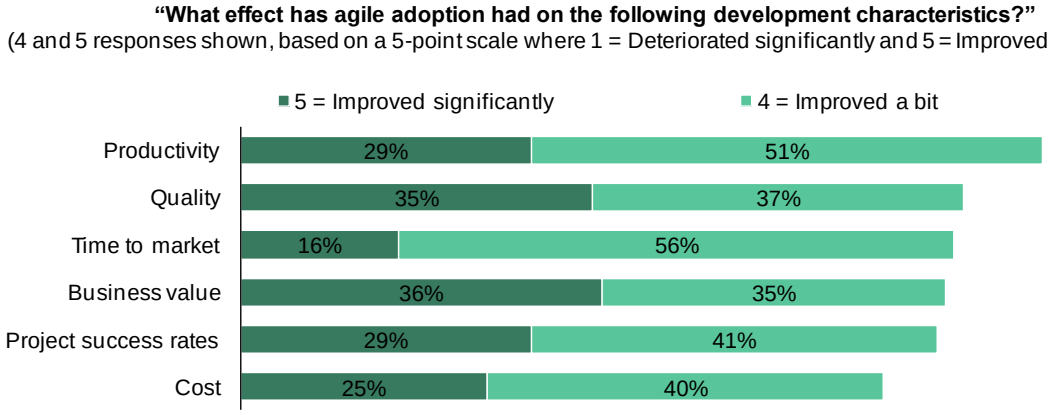
Base: 206 IT decision-makers with insight into budgeted modernization activities

Source: A commissioned study conducted by Forrester Consulting on behalf of HP, February 2010

Around The Globe, Firms Are Getting Agile By Adopting Agile Methods

Among the firms improving their SDLC processes, agile methods proved to be an effective weapon in the battle against the beast: Of those currently using an agile development approach, 80% note improved productivity, and 70% or more noted improvement in quality, time-to-market, business-value, and project success rates due to agile adoption. 65% of respondents say their cost-structures have improved with agile adoption (see Figure 9).

Figure 9
Agile Adoption Yields Positive Improvements For Development

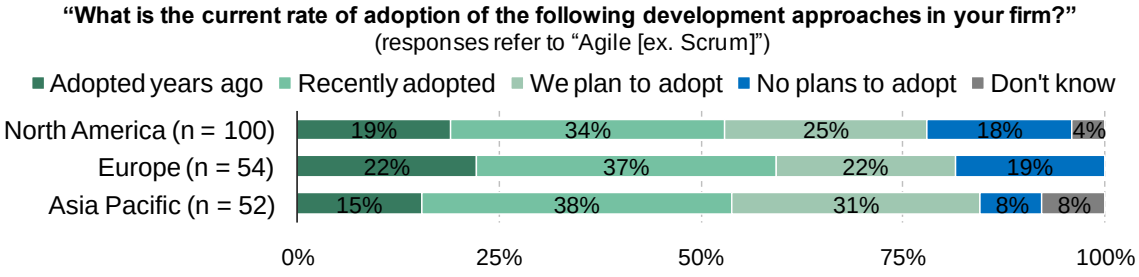


Base: 113 IT decision-makers with insight into budgeted modernization activities currently using agile development approach

Source: A commissioned study conducted by Forrester Consulting on behalf of HP, February 2010

Analysis of the geographic distribution of respondents shows some variation in the adoption rates for agile methods (see Figure 10). Europe leads the North American and Asia Pacific regions of the world. In European countries, 22% of firms adopted agile years ago, 37% recently adopted agile methods, and 22% plan to adopt agile methods. North America lags those rates slightly, where 19% of firms adopted agile years ago, 34% recently adopted agile methods, and 25% plan to adopt agile methods. Adoption in Asia Pacific countries trails even further, where just 15% of firms adopted agile years ago, 38% recently adopted agile methods, and 31% plan to adopt agile methods.

Figure 10
Europe Leads North America And Asia-Pacific In The Adoption Of Agile Methods



Base: IT decision-makers in each region with insight into budgeted modernization initiatives

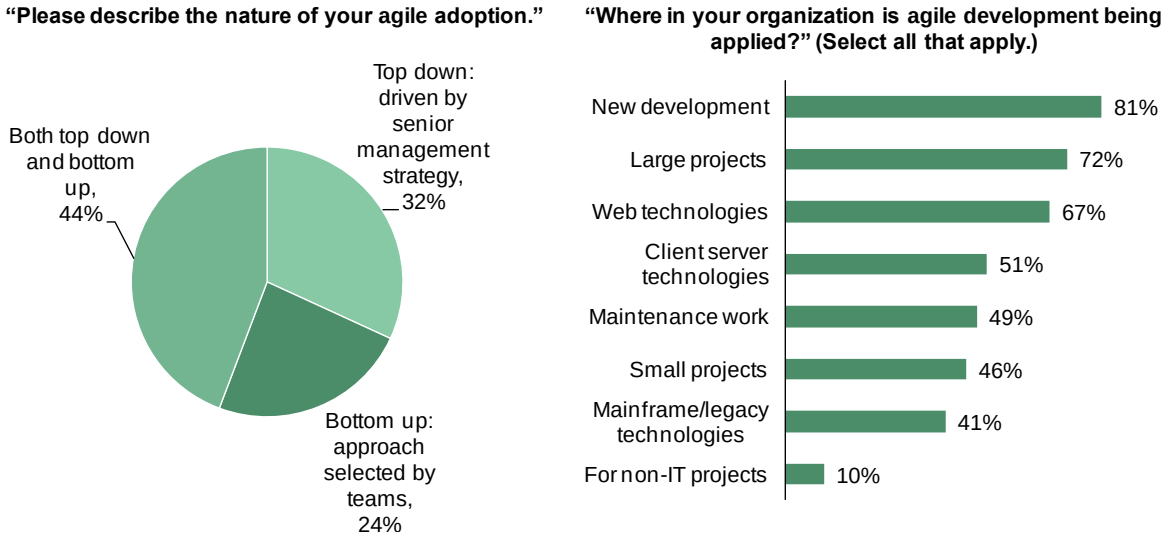
Source: A commissioned study conducted by Forrester Consulting on behalf of HP, February 2010

Employ Agile Methods On A Wide Range Of Work

The breadth of work to which respondents have applied agile methods is impressive — while it isn't surprising that 81% use agile for new development, it is surprising that 72% of respondents said they use agile on large projects, 67% for Web technologies, and nearly half of respondents apply agile methods for maintenance work (see Figure 11).

Figure 11

Firms Adopt Agile In Different Ways, Across All Types Of Projects



Base: 113 IT decision makers with insight into budgeted modernization activities currently using agile development approach

Source: A commissioned study conducted by Forrester Consulting on behalf of HP, February 2010

KEY RECOMMENDATIONS

These study results point to very high levels of interest on the part of IT leaders to modernize their computing environments, and they also yield several important observations:

- **You can't manage tomorrow's applications with yesterday's tools and techniques.** Clearly, we've reached a tipping point in the care and feeding of our application management — the ways of yesterday must give way to enable progress — especially as firms prepare for the momentous change that will accompany the pending economic recovery.
- **Rationalize to shed obsolete technology and redundant applications.** You can't focus on innovation and agility if your feet are manacled to heavyweight monolithic application portfolios. Ninety-one percent of firms admit they would benefit from an application consolidation effort, and 93% are rationalizing or planning to rationalize their application portfolios. What are you doing about it?
- **Modernize your systems development tools; the results are impressive.** The IT industry is a young industry, and it was a revolution over manual and paper business processes. Just as factories retooled for the industrial revolution, application development organizations must set aside the first-generation tooling that inhibits productivity in favor of integrated tool sets for application life cycle management that boost overall throughput while increasing accuracy and reporting.
- **Attack the three-headed beast with a three-pronged approach.** The beast wears three heads, and killing one of them does nothing to mitigate the risk posed by the other two. Bringing real agility to your business will require you to address all three: agile methods to streamline your SDLC processes, modern tooling to dovetail with agile methods, and a rationalization program to streamline your existing application portfolio by shedding obsolete and redundant technology and applications.
- **Get agile, but don't underestimate the effort to get 'agile'.** The adoption of agile methods and techniques is clearly producing enviable results by favorably impacting productivity, quality, time to market, and cost reduction. However, few things that are truly worth doing are easy to do, and the adoption of agile methods is no exception. In fact, 69% of respondents agree that "Agile projects are more difficult to execute." What does that mean to you? Adopt agile, but do so with your eyes wide open to both the benefits *and* the difficulties. Getting help to get agile could mean the difference between failure and success.

Appendix A: Methodology

In March 2010, HP commissioned Forrester Consulting to conduct a survey of 206 global IT organizations to assess their plans for modernizing their technology platforms and SDLC tools and processes, as well as their overall application management techniques. Participants in this study were IT decision-makers (manager level and above) with direct insight into their organization's modernization initiatives. Each respondent was employed by an enterprise with more than $10 million in annual IT budget and allocated funding for modernization initiatives. Each organization also maintained an application portfolio with 20% or more custom or highly customized applications. Geographical distribution of survey respondents was as follows: US: 100, Canada: 3, UK: 25, Germany: 15, France: 14, India: 17, Australia: 14, China: 18, Japan: 3. The online survey provided to participants included questions about specific modernization and application development improvement initiatives, drivers to modernize, barriers to improved application development productivity, and details on use of agile and other development methodologies. The study began in January 2010 and was completed in February 2010.

Appendix B: Modernization Terminology

The terms vendors use to describe the various application modernization options can be impossibly complex to decipher across vendors. Terms like transformation, migration, rationalization, re-engineering, and modernization have no consistent meaning across vendors.

The survey defined the terms it used for **"SDLC"** and **"Application"** as follows:

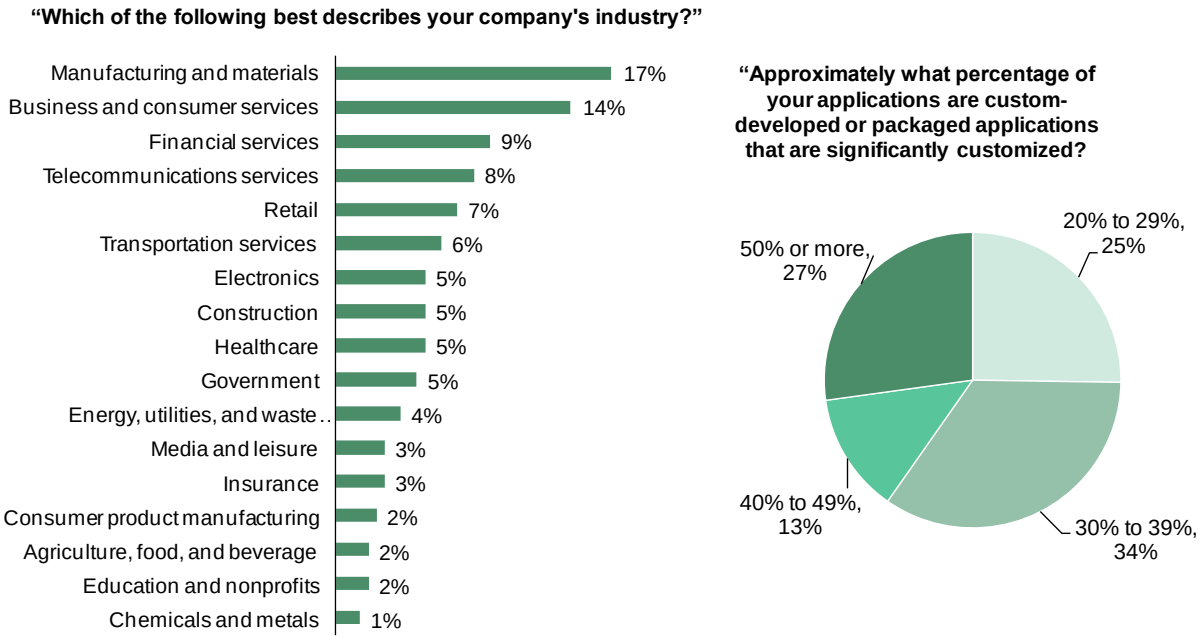
- **Software Development Life Cycle (SDLC):** This is the end-to-end processes and tools used by firms to specify, design, code, test, build, and deploy applications.
- **Application:** This includes software that is maintained by IT — both custom-developed applications and packaged applications that are significantly customized, and it excludes shrink-wrap/COTS applications such as MS Outlook, Adobe, and tools such as MS SharePoint, Excel, and Access.

We applied the term **"modernization"** consistently throughout the survey to mean the following:

- **Technology/platform modernization:** This signifies the replacement of monolithic platforms with distributed/service-based, for example.
- **Methodology modernization:** This refers to significantly changing or investing in SDLC processes or adopting new methodologies such as iterative/agile, ISO9000, etc.
- **Application modernization:** This refers to upgrading "legacy" applications, adding service-oriented applications (SOA) to monolithic applications, replacing character-based user interface (UI) with rich/browser UIs, and implementing major packaged-application upgrades.

Appendix C: Survey Demographics

Figure C1
Industries Represented; Application Portfolio Customization



Base: 206 IT decision-makers with insight into budgeted modernization activities

Source: A commissioned study conducted by Forrester Consulting on behalf of HP, February 2010

Appendix D: Supplemental Material

Related Forrester Research

"Loss Of Historical Financial Data Triggered This Application Consolidation Program," Forrester Research, Inc., March 8, 2010

"Agile Development: Mainstream Adoption Has Changed Agility," Forrester Research, Inc., January 20, 2010

"IBM Transitions RUP To RUP 2.0 But Is Not Quite There Yet," Forrester Research, Inc., January 11, 2010

"Think Lean When Doing Application Portfolio Consolidation," Forrester Research, Inc., January 6, 2010

"What Semantic Technology Means To Application Development Professionals," Forrester Research, Inc., October 2, 2009

"Modernization Decisions: Migrate, Rewrite, Or Replace A 40-Year-Old Assembler Application?" Forrester Research, Inc., October 2, 2009