

VIRTUALIZATION

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SECURITY

Handbook

Architecting an Agile Enterprise

Organizations are adopting Agile practices that allow them to recognize project flaws and change direction on a dime.

1

EDITOR'S NOTE

2

ENTERPRISES ARE
HAVING AN AGILE,
MOBILE MOMENT

3

PROJECT
POST-MORTEMS
SHOULDN'T BE AN
AFTERTHOUGHT

4

AGILE PAYS
DIVIDENDS
AT NYSE



Agility Rules

IF YOU'RE LIKE me, there are a couple of go-to games on your iPhone (or smartphone of choice) to while away a few moments between meetings. Mine is "Snood." Unfortunately, I've long mastered all the levels and have been begging for more. "Angry Birds" users don't have this problem, because maker Rivio comes out with frequent updates. That's the difference between being Agile and not being Agile.

So thinks J Schwan, founder and president of Solstice Mobile, a Fortune 500 consulting firm. In this SearchCIO.com Handbook on Agile development, Schwan tells Executive Editor Christina Torode, "Consumers have been trained to understand that [mobile] apps are iterative in terms of how they are developed. When you downloaded Angry Birds, for example, it started with 30 levels, but then they released another 30 and so on. We are trained for these app updates to occur and we are more forgiving if it doesn't have all the features that we want because we know the app will continue to evolve."

Maxim CTO Michael Le Du faces the same issues in trying to turn around mobile apps quickly and within budget. "The challenge we have now is trying to figure out the most cost-effective way to get mobile apps to the marketplace without having to spend a lot of resources and time to do that. ... We can apply Agile practices like small iterations and rapid development to any of it." So make like Angry Birds and keep your users happy. And yo, Snood developers, show a player some love. ■

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Home

Editor's Note

Enterprises
are Having an Agile,
Mobile Moment

Project Post-Mortems
Shouldn't be an
Afterthought

Agile Pays
Dividends at NYSE



Enterprises are Having an Agile, Mobile Moment

MAXIM CTO MICHAEL Le Du is trying to sort through the same dilemma many IT leaders face these days: how to quickly turn around mobile apps on a budget.

Le Du might feel even more pressure than other CTOs: Competition is fierce in his business, with plenty of other men’s magazines jockeying for the attention of the coveted smartphone audience.

On the bright side, Le Du has a tried-and-true strategy. As a self-described “Agile Unitarian” (as opposed to “Agile dogmatist”), he plans to apply his Agile best practices of choice to mobile application development projects—namely, small iterations with minimal features and functionality that are driven by end-user feedback.

Le Du took the same approach with the relaunch of *Maxim*’s website last January. At the time, he moved *Maxim* off its legacy content management system and put it on a Drupal open source Web development platform. These days, he has his eye on converting video content to play on mobile devices, for his readers’ viewing pleasure.

“The challenge we have now is trying to figure out the most cost-effective way to get mobile apps to the marketplace without having to spend a lot of resources and time to do that,” Le Du said. He’s considering third-party services, including Brightcove Inc.’s App Cloud, to build mobile apps using HTML5 and JavaScript; Sencha Inc. to develop HTML5-based Web apps; and RubyMotion, based on MacRuby, to build iOS apps.

“The good thing is the underlying technology doesn’t matter,” Le Du said. “We can apply Agile practices like small iterations and rapid development to any of it.”

Home

Editor’s Note

Enterprises
are Having an Agile,
Mobile Moment

Project Post-Mortems
Shouldn’t be an
Afterthought

Agile Pays
Dividends at NYSE



THE MARRIAGE OF MOBILE AND AGILE

At Chicago-based Solstice Mobile, an Agile Scrum-based framework is the method of choice, and the consulting firm's Fortune 500 clients are fine with that, even though it takes some getting used to, said J Schwan, the firm's founder and president.

Many enterprises are more familiar and comfortable with predictive software development approaches like waterfall, but the Agile Scrum approach is really designed to accommodate the unpredictable nature of certain projects, like mobile app dev, that may need to turn on a dime, he said.

Traditional software development methods aren't set up to handle change very easily, and the pace of change is accelerating. "The future is less and less clear, so instead of trying to avoid it, let's embrace that as the new reality," he said.

The marriage of mobile app dev and Agile methodologies is being driven largely by time to market, Schwan said, as companies need to respond quickly to new opportunities or respond to a competitor's new capability. But what is equally driving this Agile/mobile app development partnership is consumer behavior.

"Consumers have been trained to understand that these [mobile] apps are iterative in terms of how they are developed," he said. "When you downloaded Angry Birds, for example, it started with 30 levels, but then they released another 30 and so on. We are trained for these app updates to occur and we are more forgiving if it doesn't have all the features that we want because we know the app will continue to evolve."

As a result, enterprises are bringing mobile apps out of the gate more quickly by involving end users in the development process. "That's the underlying tenant of Agile: making the end user part of the development process and utilizing iterations to drive the product forward," Schwan said. "With mobile app dev, that [approach] just makes sense."

But the user-feedback loop has its downfalls, particularly for companies developing customer-facing apps, as few want all of the negative feedback flowing through the app store reviews. Instead, Schwan advises companies to

[Home](#)

[Editor's Note](#)

[Enterprises are Having an Agile, Mobile Moment](#)

[Project Post-Mortems Shouldn't be an Afterthought](#)

[Agile Pays Dividends at NYSE](#)



build an app-feedback mechanism into the app. “The majority of all feedback will stay in the app feedback mechanism that you can control, respond to and develop new features based on,” he said.

AN AGILE STATE OF MIND

Le Du also foresees Agile becoming the de facto approach to application development, mobile or not. But he believes it will take longer to make its way into the largest of organizations.

“I’ve seen that they have very engrained cultures where it’s hard to introduce Agile because business folks like to control processes and plan everything out, even if it’s not the most efficient approach,” he said.

On the other hand, Le Du, like Schwan, believes that since mobile app dev is still fairly new, larger companies are more willing to use mobile projects as a starting point for an Agile practice.

Underestimating the power of corporate culture to sink new ideas—even a small Agile mobile pilot project—is a mistake, Schwan agrees.

“A lot of [project and application development] methodologies are set up to promote boundaries and keep areas of responsibility very clearly separated, with a lot of documentation around those boundaries,” he said. “Agile is all about breaking down boundaries, encouraging transparency, frequent feedback loops and less documentation in the development process.”

Agile methodologies also break down boundaries between the business and IT by diffusing the blame game. With Agile iterations and feedback loops, business stakeholders aren’t expected to predict what the business, market and apps will be a year out, and at the same time IT won’t be held to an unattainable timetable based on those predictions.

“IT can say to the business, ‘We don’t expect you to have all the answers or know exactly what you want in six, nine or 12 months,’ and IT won’t be told by the business, ‘You got it wrong because you couldn’t predict how long it would take,’” Schwan said. “Instead, it’s about focusing on the most important features first, building that, and then looking at what’s next.”

And if Agile methodologies are not the organization’s cup of tea, there is

Home

Editor’s Note

Enterprises
are Having an Agile,
Mobile Moment

Project Post-Mortems
Shouldn’t be an
Afterthought

Agile Pays
Dividends at NYSE



always service-oriented architecture to consider. Gartner Inc. research vice president Brian Prentice has found that enterprises are having a hard time reconciling the demand for application portfolio consolidation with the trend toward developing many smaller mobile apps. He’s starting to see organizations address this by developing their own software development kits [SDKs], as Apple has for iOS developers.

“What an IT department can do is provide its own set of services and capabilities that any developer—whether they are inside or outside the IT department—can write to in a consistent way, to have consistent services and consistent data management,” Prentice said.

A media company in Europe, for example, developed a mobile app for the World Cup in 2010 that linked people to the product it was selling—the media and advertising around the World Cup—while also tracking teams, players and scores. The app had a huge number of downloads; when the World Cup ended, users didn’t need it anymore so they deleted it. But, from the company’s perspective, the app’s usefulness didn’t end there.

“In 2012, this company [also] had the media rights to the Euro Cup and developed a completely different app that was just as disposable. But the people doing the developing could use the same set of APIs that the IT department created for the World Cup app,” Prentice said. “This is when we start talking about a service-oriented architecture, because SOA is a great way to achieve this type of outcome.”

Regardless of the approach taken, one thing is clear. The march towards mobile is altering enterprise IT strategies, and one way to take hold and embrace the rapid change mobility is causing is through Agile best practices. After all, “Agile is about being able to pivot,” Schwan said. —*Christina Torode*

Home

Editor’s Note

Enterprises
are Having an Agile,
Mobile Moment

Project Post-Mortems
Shouldn’t be an
Afterthought

Agile Pays
Dividends at NYSE



Project Post-Mortems Shouldn't be an Afterthought

EVERY TEAM CAN improve its ability to deliver by changing how it looks at and conducts an assessment of its lessons learned.

People often say to me, “My projects have to be waterfall. Is there anything—from Lean and Agile—that I can begin to use to improve delivery without changing how my projects are delivered?”

My answer is always the same: “Yes!”

Traditional “lessons-learned” sessions are useless for three key reasons:

- ***Lessons-learned sessions are held at the end of the project.*** Positioning these sessions as such is presumably to allow participants to learn from what went on during the project and avoid these same mistakes in the future. The problem is that most people can't remember what happened two weeks ago, much less what happened six months or two years ago, so trying to dredge up useful lessons learned over that time period is nearly impossible.
- ***The lessons learned are team-, project- or technology-specific.*** The majority of the items that come up in a lessons-learned session are specific to that project's people and technologies. Often, a different team will be tackling the next project, which comes with different issues, context and technologies. As a result, I find that any project-, team- or technology-specific items are not useful in a lessons-learned context.
- ***Items that are not project-specific are so vague as to be useless.*** In order to deal with the above two issues, individuals will often generalize the

Home

Editor's Note

Enterprises
are Having an Agile,
Mobile Moment

Project Post-Mortems
Shouldn't be an
Afterthought

Agile Pays
Dividends at NYSE



information to make it universally applicable to future projects—making the information generic to the point of uselessness. I hear statements like, “communication was a problem,” “stakeholders should be more involved,” “budgets should have been more controlled,” and the like. While these statements may be true, they make no note of the root cause or recommendation for corrective action. How could they? Nearly every real problem that could or should be addressed to improve production is a tangled web of interdependent issues, and every project has its own unique web of problems, making general solutions very rare indeed.

Home

Editor's Note

Enterprises
are Having an Agile,
Mobile Moment

Project Post-Mortems
Shouldn't be an
Afterthought

Agile Pays
Dividends at NYSE

WHAT LEAN OR AGILE APPROACHES CAN OFFER

There's a fundamental difference between traditional lessons-learned sessions and the corresponding Lean or Agile approach. Traditional sessions are conducted to avoid making the same mistakes on *future projects* that were made on past projects. Lean and Agile lessons-learned sessions—typically called *retrospective* or *Kaizen* events—are intended to make immediate improvements on *current projects*. Call these sessions whatever you like, but the latter approach encourages improving current project processes in incremental, real-time steps.

Nearly every real problem that could or should be addressed to improve production is a tangled web of interdependent issues.

Changing the purpose and frequency of the lessons-learned sessions resolves the three issues mentioned above:

- The items identified are still specific to the team, project or technology, but that's OK because the team, project and technology are currently in flight and the team has the knowledge and context to do something about perceived problems immediately.
- Sessions are held every two to four weeks throughout the project, resulting



in three key outcomes: It's much easier to remember what went well and what needed improvement; items can be acted upon by the team that identified them in the context in which they have relevance; and another session will follow in a couple of weeks, allowing the team to inspect the results of its actions and adapt a new solution if the last one didn't fix the problem.

- Vague solutions are less likely to emerge under the Lean or Agile approach, wherein the meeting is not over until the problems, root causes and solutions are made very clear and specific actions are planned to improve matters. These actions are then reviewed at the next session to see if the intended results occurred.

Anybody can improve his or her team's ability to deliver project results by understanding the benefits of Lean and Agile lessons-learned sessions, even if the project is managed by a traditional approach. —*Joseph Flahiff*

[Home](#)

[Editor's Note](#)

[Enterprises
are Having an Agile,
Mobile Moment](#)

[Project Post-Mortems
Shouldn't be an
Afterthought](#)

[Agile Pays
Dividends at NYSE](#)

Agile Pays Dividends at NYSE

ROBERT KERNER DOESN'T waste time. The senior vice president and chief digital officer at New York Stock Exchange (NYSE) Euronext believes that in this fast-paced, technical world, slowing down might as well be stopping. For him, it's a world that demands Agile development methodologies and transparency. Those not on board should be prepared to step aside.

“Running a Web shop or a digital shop as a waterfall democracy, you're going to be swallowed up and lose,” Kerner said. “To be successful in this space, you have to be able to move where technology is going very quickly, and to do that, we have an Agile development environment.”

Agile development methodologies were not the practice of choice in 2009, when Kerner came to NYSE Euronext, a global security exchanges operator and maker of trading technologies based in New York (it was acquired in December by Intercontinental Exchange Inc.). That lack of agility left the organization's Web presence in a dire state.

One of the first things Kerner did was talk with his team and ask questions.

“A question might have been, ‘How do you add a submenu to a menu?’ [on one of our websites], and the developer on the floor told me it's possible, but it was very difficult to do,” Kerner said. “I asked him to show me exactly [how it was done], and I ended up going through five levels of management before I got to someone who could track the change. I knew at that moment this wasn't the way I wanted to run my shop.”

What he wanted was the ability to track changes quickly, to react on the fly to what worked and what didn't. Kerner turned to his CIO, seeking millions of dollars for a multiyear Web development project—and anticipating

[Home](#)

[Editor's Note](#)

[Enterprises
are Having an Agile,
Mobile Moment](#)

[Project Post-Mortems
Shouldn't be an
Afterthought](#)

[Agile Pays
Dividends at NYSE](#)

mounting a major defense for his proposal. Instead, he was told “do whatever you need to do” to get off legacy content management systems (CMS) and develop new websites to meet internal and external users’ needs.

Prior to Kerner’s arrival, NYSE Euronext had already spent significant money and two years on a Web content management platform that failed to meet business needs. They were looking for change that worked, and replacing a longstanding waterfall development model with Agile development methodologies was a place to start.

AGILE: MAJOR CULTURAL CHANGE REQUIRED

Getting the go-ahead was the easiest part, Kerner said—far easier than the cultural change that had to follow. About 100 people, mostly contractors, were let go.

“It’s really difficult to teach a team of that size to think agilely and get the bureaucracy out of their minds,” Kerner said. “I had to change the culture to one of transparency and collaboration with the business and set the processes accordingly.”

Moving to 100% transparency proved particularly challenging given that metrics that tracked individual team members’ day-to-day progress were established and displayed publicly.

“For a lot of people, that kind of transparency is too much, so they leave,” Kerner said. “But I told the business, if they want to look at a line of code, they’re welcome to it. They can look at any level of detail. I have nothing to hide.”

And those who chose to stay? Kerner came to find that they were superstars.

“Only the really best people decide to stay and work in that environment because they love transparency. They want to show off what they can do,” Kerner said.

“For a lot of people, that kind of transparency is too much, so they leave.”

***—ROBERT KERNER,
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Home

Editor’s Note

Enterprises
are Having an Agile,
Mobile Moment

Project Post-Mortems
Shouldn’t be an
Afterthought

Agile Pays
Dividends at NYSE

MANY HAPPY RETURNS (ON INVESTMENT)

A review of the previous team’s process for selecting a new CMS under the old waterfall method showed it had spent six months and likely plenty of money measuring the pros and cons of each system—and still came to the wrong decision, he said.

Kerner and his team spent about three days doing due diligence and making phone calls to select a CMS.

“If I was going to come to the wrong decision, I didn’t want to spend that much time doing it,” Kerner said. “We built failure into the plan, so we were allowed to fail. Failure in an innovative space is a good thing. If you’re not failing, you’re not innovating.”

A Drupal open source Web content management platform was selected, and Kerner promised that new capabilities for its Web-based services would be out in 30 days. In less than a month, a new corporate blogging platform called Exchanges was up and running. Two

In less than a month, a new corporate blogging platform called Exchanges was up and running.

months later, new versions of NYSE Money Sense, a consumer-facing educational website, and NYSE Connect, a social site for NYSE-listed companies, were overhauled and relaunched.

“I wanted to continue going linearly, but there was so much pent-up demand around the business for a Web presence that everybody and their brother wanted something,” Kerner said.

In retrospect, the company might have taken on too much: Kerner admits, if he had to do it again, he would have gone for an approach emphasizing linear over exponential growth. Nevertheless, he’s pleased with having successfully relaunched 40 customer-facing and internal sites in a year and a half.

—Karen Goulart

Home

Editor’s Note

Enterprises
are Having an Agile,
Mobile Moment

Project Post-Mortems
Shouldn’t be an
Afterthought

Agile Pays
Dividends at NYSE

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Home

Editor's Note

Enterprises
are Having an Agile,
Mobile Moment

Project Post-Mortems
Shouldn't be an
Afterthought

Agile Pays
Dividends at NYSE



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