Accelerating Business Agility with Modern ALM Practices

Business agility with quality and scale

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Welcome

Thank you for downloading the *Accelerating Business Agility with Modern ALM Practices* newsletter. To support your initiatives in leveraging software and competitive applications to drive your business evolution, including research from Gartner, we have compiled a set of competitive market resources for you. The Application Lifecycle Process including what software gets built, how it gets built and who decides what to build is evolving. No longer can companies stay competitive and grow their business without thinking about software.

Our goal in this newsletter is to help companies see the practical impact and competitive advantage an Application Lifecycle Management (ALM) solution can have on their business. Microsoft’s Visual Studio ALM is an end to end, integrated solution that allows you to orchestrate and deliver complex software with the highest quality, at a faster pace, and at a lower cost. This is the new, modern formula of capturing quality, speed, and cost in one ‘box’.

Looking forward to hearing from you!

Tiffany Treacy
GM Developer Tools Marketing, Microsoft

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FIGURE 1  Featured Case Study: Columbia Sportswear Company

Source: Microsoft
Case Study

Columbia Sportswear Company’s motto, “Trying Stuff Since 1938,” goes far beyond product development. They understand that their software is just as important to their customers as the technology in their apparel and shoes.

And Columbia, like so many companies today, recognizes that a traditional web storefront isn’t enough. They’re investing in innovative, engaging applications that deepen their customer relationship and differentiate their brand—like Columbia’s GPS PAL™, a cross-device mobile journaling app linked to a separate tracking website.

To deliver these innovative solutions, Columbia Sportswear development team applies modern ALM practices using Microsoft Visual Studio.

Columbia is racing ahead. What are you doing to keep up? To stay in front of your competitors?

Engagement: The new normal

In 2011, Forbes pointed out that consumers will use technology to engage with your company whether you invite them to or not. If you aren’t managing your presence online and in social media, your company’s critics may be managing it for you.

Even if your core business is not consumer-facing, startups and hobbyists can access and aggregate publicly-available data about your company to reach surprising insights.

Do you want to know what they know? What if you could put them to work for you?

Using real-time analytics, Microsoft Studios’ 343 Industries was able to respond to cheating patterns during an online multiplayer Halo 4 tournament. They quickly identified users who were trying to game the system. Their fast turnaround saved the game experience for honest players.

You already knew you needed business intelligence. Now you need it faster, and from a wider range of data sources. With the right data, and the ability to respond quickly to emerging trends, your business is ready for whatever challenge or opportunity you discover.

Integrate your business intelligence strategy with your ALM solution to give you the fast feedback and reaction time you need to stay on top.

The Bottom Line

You need modern, capable, adaptable IT, focused on delivering value to both your external and internal customers.

When you’re operating at enterprise scale, narrowly-targeted lifecycle tools don’t mix well. They become clunky and slow, and introduce bottlenecks and risk into your process—just where you can least afford it. An ALM solution for the enterprise will bring together all of the elements you need for success, and integrate them seamlessly and cost-effectively.

A New Approach

Today’s software applications demand new skillsets and new ways of thinking. Whether you build projects in-house or outsource them, everyone in your organization will have a role to play in their success.

True business agility is a mindset, and it extends to the highest levels in your organization. Agility brings lean thinking, creativity, and flexibility into your decision-making processes.

Above all, business agility relies on understanding. An agile company relies on strategic metrics to make its most important business decisions. You need reliable data to make the right business decisions. Software needs to be designed for measurability, and its data must be meaningful and current.

Three key metrics are critical to your success. First, the flow of business value must be measured and improved. Understanding what provides business value, and delivering those features on a sustained, regular cadence is key. Secondly, you must be able to identify and remove bottlenecks in order to reduce the cycle time for delivering that business value. It’s not enough to simply deliver regularly, you need the information at your fingertips to identify and remove the speed bumps slowing you down. Finally, you need to be able to identify and eliminate sources of rework, such as bugs, incorrectly specified features and the like. The right
metrics can identify this failure demand, and point you in the right direction to eliminate it.

An ALM solution built around metrics, instead of guesswork, provides total traceability and customizable views into the work of your organization. This allows unprecedented flexibility to manage your processes your way, to get agile at your own pace.

**Leadership**

At all organizational levels, your development teams need connected tools to coordinate and measure their work. This is especially true if your teams are geographically distributed or if some of the work is outsourced. Some organizations have invested heavily in measuring “progress”, but do you know how to measure success? Value? ROI?

What difference does it make when it’s going to be done, if you don’t know whether it was worth doing?

One way leaders can support building the right thing is to use the Build-Measure-Learn cycle popularized by Eric Reis in The Lean Startup. Leaders have their work cut out for them. They must avoid vanity metrics and focus on metrics that matter. They must be willing to aggressively cut losing efforts and pivot to something that works. They must aggressively focus on getting marketplace feedback from the smallest possible product or feature that will give them valuable data. And they must support fast failures, while eliminating the failure averse culture so many firms exhibit.

Business agility is hard. It demands constant communication, coordination and transparency. To connect your empowered teams, you need the right tools for the right roles. Decision-makers don’t need to be bogged down with complex tools – they need lightweight dashboards where their Key Performance Indicators really stand out. Developers demand the best development environments, optimized for the platform and language they code in. Perhaps you have cross-functional teams where members wear several hats each? All the more reason to want tools that are optimized for specific activities, yet closely integrated so the transition from one task to another is seamless.

One size doesn’t fit all. Business agility must take into account your organization’s history, structure, and culture. Tools that try to impose a single out-of-box solution are likely to be too rigid to use, or too narrowly-focused to be useful. You need a tool that grows and evolves with you, and a tool that brings roles together instead of segmenting them apart.

**Agility your way**

Prescriptive software development methodologies provide a textbook approach to process improvement and have been successful for many organizations. Yet thousands of companies are finding another way: using agile and lean practices to adopt agile in their own way, at their own speed.

By overlaying agile principles on top of their existing processes, teams are finding that they can gradually introduce agility without the risks of dramatic change. By focusing on the flow of value through the software delivery pipeline, these teams are improving cycle time, reducing mean-time-to-repair and eliminating bottlenecks. This focus drives them to be ever more agile.

Introducing a flow based method like Kanban on top of your existing process can help you to gradually introduce an agile cadence to your organization. Kanban helps you visualize bottlenecks and highlights where the next improvement should be made.

You don’t need to adopt a prescriptive methodology wholesale to become more agile. You can adopt agile on your own terms and on your own timeline, the key is to have tools that allow you to customize your unique structure and functional needs.

**Quality Enablement**

Agility without quality does not deliver value, an emphasis on quality without agility usually results in value being delivered late to realize business opportunities with the needed sense of urgency. Whether the software “meets the spec” is probably the least important aspect of quality today. Quality Enablement entails full lifecycle ALM practices that enable development teams to strike the hard balance between agility and quality.
The practices adopted by a team to instate quality have a direct impact on the ability of the team to deliver value with agility. Conventional quality assurance practices that emphasize quality over agility or push quality at the end of the development process will no longer scale to meet your existing or future business demands.

Quality Enablement starts with teams having an aligned understanding of the acceptance criteria priorities (functional and non-functional) from the initial phases of the lifecycle, and working in unison to continuously develop and test for the acceptance priorities. This allows team to avoid “later than possible” detection of unmet requirements and lower rework costs.

Investing in tool that enable quality throughout the process is key as they allow to engage each stakeholder and facilitate continuous feedback and validation. Enabling build | deploy | test automation services to reduce cycle times in continuously integrating and validating the quality of team builds, test lab management automation services to reduce the cycle times in standing up and releasing test environments needed to continuously execute tests of varying intents (build verification testing, systems integration testing, user acceptance testing, stress testing) and ability to reuse shared test artifacts from the development phase of the lifecycle to continuously monitor the health of software in production and detect anomalies prior to users encountering them are example of tools and practices used to enable quality.

**Operational Scale**

Key software trends are driving the move to cloud and service-based computing. Always-accessible “sticky” apps allow consumers to carry their interactive experience seamlessly from one device to another, it is also revolutionizing the way organizations invest and take advantage of infrastructure. Operational scale affects every imaginable kind of application, from the latest big multi-player game launch to innovative productivity tools that empower employees anywhere and at any time. And Big Data strategies underlie all kinds of software, from consumer to business.

A cloud-only strategy isn’t right for every business every time. Organizations need technical flexibility. Combine reliable, scalable cloud deployments with the right mix of on-premise servers, self-hosted services, and analytics tools to get the balance you need.

Applications that allow you to manage both cloud and on-premise servers easily facilitates the scale and flexibility needed, such tools should integrate with your main engineering tools to give developers deep insight into any operational issues that occur in production. Xerox, who recently implemented a powerful integration between Visual Studio 2012 and System Center 2012, has seen the benefits when troubleshooting production issues. “Our systems tell us exactly where code problems such as stored procedures are and the specific lines of code that are causing problems.” (Xerox, 2013) This powerful collaboration between development and operations makes operation scale possible.

To learn more about DevOps, visit [http://www.microsoft.com/visualstudio/eng/alm/operate](http://www.microsoft.com/visualstudio/eng/alm/operate)

“In addition to responding quickly to business requests, the Halo 4 team can take BI data pulled from the game each day and identify user trends, such as the average length of a game and the specific game features that players use the most. By getting these insights, the Halo 4 team can make frequent updates to the game.”

– 343 Industries, 2013
What IT Leaders Need to Know About Cloud SDLC Services

Cloud SDLC PaaS can mean faster adoption of agile, better support of distributed teams, better testing and lower capex. But AD managers must know where to invest time and energy, focus adoption on agile delivery of mobile and Web apps, know how AD tools work offline and proactively manage vendors.

Impacts
- Cloud-delivered tools support anywhere, anytime access and a focus on collaboration, which better supports distributed agile teams.
- Software development life cycle (SDLC) platform as a service (PaaS) enables quick innovation by vendors, which may complicate tool integration and process and data stability amid frequent updates.
- Maturing tools shift from software as a service (SaaS) to PaaS, creating value streams for users and vendors by accelerating feature delivery.
- As cloud application platforms continue to mature, cloud development tools will become a natural fit.

Recommendations
- Invest in training and skills transformation, as it takes work to create actualized teams.
- Focus adoption on the agile delivery of mobile and Web applications, not legacy applications.
- Understand how application development (AD) tools work offline, and how they continue working when they’re disconnected.
- Push vendors to support RESTful integration APIs and interoperability standards, and watch for warning signs of vendors losing focus and expanding into tangential markets.

Strategic Planning Assumption
Through 2018, the adoption of agile development delivery practices, combined with distributed workforces, will drive the adoption of cloud-delivered AD life cycle services.

Analysis
Cloud SDLC solutions are a subset of the overall SDLC and application life cycle management (ALM) market, which encompasses solutions that are delivered as extensible platforms for managing the activities of a development team. Most platforms focus on agile development practices, but may encompass different areas of the overall development life cycle. Key areas of support are project planning and execution and software testing (supporting scale through the cloud and multiplatform/device testing). These tools deliver on-demand access, a high degree of support for collaboration and core integration facilities based on Web technologies. The leading vendors in the market are starting to support third-party content through stores that enable the core platform to extend to support broader roles and integrations.

Impacts and Recommendations
Cloud-delivered tools support anywhere, anytime access and a focus on collaboration, which better supports distributed agile teams.

While the canonical structure of an agile team is 10 people in a shared space, this often isn’t the real structure; even when it is, specialists may sometimes be called in. The nature of agile is such that most global organizations have talent scattered throughout multiple locations, which makes it a challenge to utilize this talent on a project anywhere in the world while retaining everyone’s individual value.
Traditional ALM software can provide scalable, collaborative solutions, but cloud-delivered solutions reduce the cost and time required to initiate tool use and focus naturally on teams, not on individuals. What sets cloud solutions apart now is their thought leadership on scalability in dealing with distributed teams and related challenges. Examples of cloud solutions’ thought leadership advantages include:

- Distributed version control systems (DVCSs) are improving the productivity first realized by open-source teams. Commercial offerings (e.g., Bitbucket, GitHub, and Stash) are adding the needed governance and integration.

- Agile planning tools (e.g., CollabNet, Rally, and Visual Studio Team Foundation Server 2012 [TFS]) make it easy to get started and demonstrate the benefits of agile, but without the limits of scale.

- Testing in the cloud offers infinite scale for load/stress tests and on-demand pricing (e.g., BlazeMeter, CloudTest, and NeoLoad), and simplifies testing across devices (e.g., CloudTest, DeviceAnywhere, Mobile Labs, and Perfecto Mobile).

- Core development environments will continue to appear (e.g., eXo Cloud IDE and Cloud9 IDE), but will succeed primarily in scripting projects, rather than in enterprise-scale traditional coding.

The adoption of services for testing services will differ from the adoption of services for life cycle management processes. Cloud testing services provide scale and features that can’t be matched by traditional test solutions. As a result, test labs are becoming incredibly complex, because they need to support multiple browsers and/or devices, expand to Internet-scale Web loads and quickly provide clear analytic information to support rapid release cycles.

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**FIGURE 1** Impacts and Top Recommendations for Cloud SDLC

<table>
<thead>
<tr>
<th>Impacts</th>
<th>Top Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloud-delivered tools support anywhere, anytime access; development teams benefit from a collaboration focus, which aids distributed agile teams.</td>
<td>- Tools enable collaboration, but it takes work to create actualized teams.</td>
</tr>
<tr>
<td>SDLC PaaS speeds vendor innovation, but requires proper design standards for integration with existing tools.</td>
<td>- Push vendors to support RESTful integration APIs and interoperability standards.</td>
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<tr>
<td>Maturing tools shift from SaaS to PaaS, creating value streams for users and vendors by accelerating feature delivery.</td>
<td>- Establish clear SLAs supporting process and data integrity, and stay on top of deprecation notices.</td>
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<tr>
<td>- Platforms mean opportunities for more features, so understand vendor road maps.</td>
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</tr>
<tr>
<td>- Watch for warning signs of vendors losing focus; a healthy ecosystem means they deliver consistent core competencies.</td>
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Source: Gartner (February 2013)
**Recommendations:**

- While tools enable collaboration, it takes work to create actualized teams. Organizations can’t simply load tools and expect them to rescue a dire situation. Cloud solutions, on the other hand, have an easy onramp, although the challenges are building a support culture, making sure there’s enough budget and making sure the organization is willing to change. Utilize cloud tools with tiger teams, and learn what works and where the roadblocks are.

- Cloud tools are best suited for organizations focused on the agile delivery of Web applications. While these tools can target many types of development, their use is optimized for cloud delivery, where a culture of continuous delivery is natural. Don’t expect these systems to help with legacy technologies or non-cloud-delivered application packages.

- Understand how the tools work offline, and how they continue working when they’re disconnected. Development team members need to be productive anytime, anywhere, and while network connectivity is improving, the ability to work offline means that most cloud-delivered AD solutions support disconnected use and synchronization.

**SDLC PaaS enables quick innovation by vendors, which may complicate tool integration and process and data stability amid frequent updates**

Cloud delivery offers vendors significant advantages in the ability to incrementally deliver new functionality, measure the use of features and build a more connected relationship with users. The cloud vendors that best understand the concept make use of the lean startup philosophy (see The Lean Startup), bringing new features to market incrementally. These vendors can readily make use of open-source innovations (e.g., GitHub, Hudson and Selenium) to fuel the delivery of solutions on top of the raw function set. This means new functionality comes out more frequently for these solutions than for traditional on-premises offerings.

It is imperative that your development process and artifacts remain stable, and that strong facilities are provided for importing and exporting information from the system. Most important is the ability for core development work to continue if the service goes offline. The primary focus area for this is source code access. This will be a driver for the adoption of DVCS systems (e.g., GitHub, Mercurial and Plastic SCM). Anything that stops your development team from getting a day’s work done is fatal to productivity. Availability and fears around source security will limit broad service adoption in enterprise-class development.

These solutions must integrate with other services and traditional on-premises tools. Integration is becoming a key capability in ALM, because most organizations have multiple vendors. The best way for this information to flow is via RESTful interfaces. IBM initiated the Open Services for Lifecycle Collaboration Change Management (OSLC) effort to provide a standard set of data definitions and APIs. OSLC integration hubs are available from Tasktop Technologies and Kovair.

**Recommendations:**

- Push vendors to support RESTful integration APIs and interoperability standards. Although REST doesn’t ensure truly pluggable interoperability, it gets you part way there. W3C Linked Data and OSLC are efforts to create standard services and data definitions.

- Establish clear operating procedures to deal with service downtime and offline operations. Stay on top of deprecation notices. This is most important with source management, where you should have a local repository already established.

**Maturing tools shift from SaaS to PaaS, creating value streams for users and vendors by accelerating feature delivery**

Most services available in the development life cycle will begin as focused solutions (e.g., agile planning and requirements definitions) delivered as SaaS offerings. As these services mature, their providers will shift them to become platforms. Normally, we don’t think about development tools as platforms, but even some traditional tools (e.g., Eclipse and Visual Studio) have created an ecosystem of surrounding products and services. This will happen primarily in life cycle management tools, where the providers will create the core set of services around work items, user management and workflow, and will enable extensions and compositions for custom reports or services outside their core competencies that will come from other providers.
This will be a benefit to providers and users, because companies often lapse into the “can’t say no to a new feature” syndrome. By building a platform and focusing on the core value provided, the vendor shows that it knows its audience and maintains a more consistent flow and architecture. Meanwhile, the ecosystem around the product will enable the full range of needs to be met by vendor partners and users.

Platform providers also are evolving life cycle offerings that will enable them to compete (e.g., CloudBees, Microsoft and salesforce.com). These vendors are starting with a runtime platform, and are then building tools and an ecosystem around it.

**Recommendations:**

- SDLC platforms create opportunities for additional features through third parties or the organization’s extension. Thus, it’s important to have a clear understanding of the vendor’s road map in order to know that the vendor can be expected to fill out the platform on its own, and where future conflicts may arise.

- Watch for warning signs of vendors losing focus. A healthy ecosystem means the vendor delivers consistent core competencies, and that it will allow others to expand their footprint. In a nascent market, vendors are unlikely to chase down every new feature idea to capture every possible customer.

- Avoid vendors that create their own standards where they could plug in existing solutions or make use of existing/emerging standards.

**As cloud application platforms continue to mature, cloud development tools will become a natural fit**

Development tools and application platforms naturally fit together, and application platform providers often end up becoming the largest and most persistent development tool providers. Open source changes this model, though not in the same way as a specific vendor would. Since offerings built on open source are pulled together to create PaaS solutions, they generally are paired with sets of tools that simplify the creation and delivery of applications to a cloud platform. We expect to see a variety of these approaches as vendors jockey to position their particular offerings with some that will target certain environments and others that will be positioned as cross-platform.

Certainly elements of a life cycle are less platform-relevant than others (e.g., managing defects or requirements), but tools seeking to deliver productivity enhancements, such as translating requirements to implementations, will depend on platform frameworks and services. The challenges will be in how vendors deal with the management of tool configurations and frameworks that match, and whether they deal smoothly with application and platform evolutions. These are the core components of a DevOps approach, and providers in this space will be a good foundry for best practices. There will be a broad spectrum of tools in the life cycle space, just as there are in noncloud AD tools: some that target specific application platforms, and others that just enable development practices in the cloud.

**Recommendations:**

- Recognize that like traditional development environments, most organizations will have a mix of cloud SDLC services to address specific situations. Make this a controlled mix, however, guided by the organization’s needs and contained experimentation.

- Understand the practices cloud services providers use. Many, such as Google, IBM and Microsoft, consolidate their development practices in publications and presentations that are freely available.

Gartner Research Note G00247367, Thomas Murph, 14 February 2013
Bringing It Together

Microsoft offers a range of integrated solutions to unify your software business. With end-to-end support of the software delivery pipeline, these solutions link together everything from portfolio and project management, requirements, and business engagement all the way to deep developer, testing, and operations support. Broad cross-platform support means hybrid software shops can coordinate and share information across platforms, infrastructures, and teams. Large enterprises can operate at scale, and smaller organizations can plan for future growth. Thought leaders can share ideas and strategy, keeping everyone in the loop. The entire team can build quality into every product from the start.

The Visual Studio 2012 suite of application lifecycle management tools provide a powerful integrated solution to help you deliver value continuously. They can help increase the flow of business value, reduce overall cycle times to deliver feature, and reduce rework costs from a variety of sources.
Microsoft offers a range of solutions to manage your development cycle independently of the development methodology used, the development language or the platform used.

**Get Started**

To learn more about how Microsoft solutions can help make your company a modern software company, visit [www.microsoft.com/alm](http://www.microsoft.com/alm).

**References**


Source: Microsoft