

BCG ON AGILE

- AGILE STARTS—OR STOPS—AT THE TOP
- AGILE TRAPS
- GOING ALL IN WITH DEVOPS
- TAKING AGILE WAY BEYOND SOFTWARE
- NICK JUE ON TRANSFORMING ING NETHERLANDS
- AGILE MEETS REGULATORY COMPLIANCE
- THE END OF TWO-SPEED IT
- FIVE SECRETS TO SCALING UP AGILE
- TAKING AGILE TRANSFORMATIONS BEYOND THE TIPPING POINT
- VIEWS FROM THE FIELD

HOW CEOs KEEP AGILE TRANSFORMATIONS MOVING

Boston Consulting Group (BCG) is a global management consulting firm and the world's leading advisor on business strategy. We partner with clients from the private, public, and not-for-profit sectors in all regions to identify their highest-value opportunities, address their most critical challenges, and transform their enterprises. Our customized approach combines deep insight into the dynamics of companies and markets with close collaboration at all levels of the client organization. This ensures that our clients achieve sustainable competitive advantage, build more capable organizations, and secure lasting results. Founded in 1963, BCG is a private company with offices in more than 90 cities in 50 countries. For more information, please visit [bcg.com](https://www.bcg.com).

Preface

Simply put, agile works. But putting agile to work is no simple thing.

As an organization becomes agile, it becomes more collaborative and creative. The effort yields so much: faster product delivery time, better product quality, stronger financial performance, and greater employee engagement. The payoff is clear.

Becoming agile doesn’t come easy, though. It requires big changes in culture, values, and behaviors. It means a rapid evolution of the enterprise.

An agile initiative delves deep, requiring new things of leaders and employees. Leaders need to signal change by adjusting their own behaviors, and they must articulate both the particulars of change and the desired outcomes. Employees, for their part, need to know what the new ways of working mean for them: why they are critical for mutual success and how employees should adjust their behaviors accordingly. By uniting employees around shared objectives and a shared responsibility for results, leaders can achieve the shifts needed for a successful transformation.

The articles in this edition of *BCG on Agile* illustrate the adoption of agile practices. They highlight the factors that contribute to the success of agile initiatives and identify the situations that can get in the way. They can guide your company’s agile transformation and help you deal with pain points.

Whether you are an executive leading your organization’s agile transformation, a business head piloting a series of new projects, or just eager to learn more about agile, these articles will, we hope, provide the insights you need to make agile work for you. We look forward to hearing from you. Contact us at Agile@BCG.com.

Martin Danoesastro
Senior Partner and Managing Director

Benjamin Rehberg
Partner and Managing Director

Contents

FEATURE	
How CEOs Keep Agile Transformations Moving	2
PERSPECTIVE	
Agile Starts—or Stops—at the Top	5
PERSPECTIVE	
Agile Traps	8
INSIGHT	
Going All In with DevOps	10
INSIGHT	
Taking Agile Way Beyond Software	17
Q&A	
Nick Jue on Transforming ING Netherlands	22
FOCUS	
When Agile Meets Regulatory Compliance	24
PERSPECTIVE	
The End of Two-Speed IT	29
PERSPECTIVE	
Five Secrets to Scaling Up Agile	33
PERSPECTIVE	
Taking Agile Transformations Beyond the Tipping Point	39
Views from the Field	43

HOW CEOS KEEP AGILE TRANSFORMATIONS MOVING

by Martin Danoesastro, Benjamin Rehberg, and Grant Freeland

HERE'S A COMPLAINT WE'RE hearing more and more frequently from client CEOs. "I've got a bunch of agile pilots going. Many are actually working. I'm seeing results, but they're not transforming the company. They're not having the full impact I expected."

There's no question that making the transition to agile ways of working, especially at scale in a large and complex organization, is a tall order. Agile transformations that stall or fail to reach the transformational tipping point are common.

Successful leaders do five things consistently well to keep agile transformations on track.

Successful lighthouse projects can establish momentum and achieve scale as the results roll in and the organization gains understanding of what agile can accomplish. But the extra push from the CEO—and the leadership team—can play a crucial role in getting over the inevitable hurdles. On the basis of our experience, we have identified five things that successful leaders do consistently—and consistently well—to keep their transformations on track.

Start with *Why*

New ways of working are not goals in themselves: they are a means to an end. To mobilize the troops and keep everybody on track when times are rough, leaders articulate why they want to change: What are the objectives and desired outcomes? Changing is hard work, and in the face of difficulty, people tend to gravitate toward the old and familiar ways. Moving beyond the tipping point in agile transformations requires a shared conviction that continuing the way the company has always done things is not good enough. Setting new standards in customer service, getting products to market before competitors, disrupting the industry, achieving step changes in productivity, and winning the war for talent are all examples of objectives and outcomes that organizations can rally behind. People need to know why the new ways of working are critical.

Adopt the Principles, Adapt the Practices

At its core, agile is a set of cultural values, principles, and behaviors, rather than a set of specific practices. Adopting values, principles, and behaviors can be done successfully only by shaping the context in which people work.

Depending on the nature of the underlying work, the contextual solutions will differ. New ways of working on the interface of business

and IT will likely include elements of, for example, agile scrum and design thinking, while customer service and operations activities may benefit more from lean or the self-management practices of Holacracy.

For an individual team or a startup, specific practices and ceremonies go a long way toward leading people to “live” the aspired-to cultural values and principles. But spreading values and principles across hundreds of teams in a large and complex organization requires addressing almost all elements of the operating model to set the context in which agile behaviors can take hold and thrive. This level of change almost certainly needs to be driven by the CEO, as it often includes widespread alterations in such areas as governance and funding models, organization structures, incentives and performance management, location and sourcing strategy, measurement frameworks, and technological enablers.

Change Your Leadership

Nothing leads like an example. Leaders should push themselves to adopt agile ways of doing things and publicly demonstrate their own changing behaviors. The public aspect is important. To signal change at one company, executives in certain divisions gave up their offices so that the company could create team rooms. At another, executive team members committed to holding weekly “town hall” meetings in the company café. In addition to providing general business updates and answering questions at these meetings, individual executives spoke about their personal-development agendas.

Getting experienced leaders to change their behaviors is not easy. After all, agile behaviors are not the behaviors that propelled most of them into senior leadership positions in the first place. Many leaders find that they are required to unlearn what made them successful, and for more than a few, this is a bridge too far. CEOs need to recognize that agile transformations almost certainly require at least some changes in the composition of the leadership team. These are tough decisions because the executives in question haven’t done anything wrong. Still, making the

necessary changes has two benefits. Most important, it puts the people who will help drive the transformation into critical roles. It also sends an unmistakable message to others who might be sitting on the fence of change: they need to get with the program before they encounter a similar fate.

Align to Empower

Small, cross-functional, empowered teams are at the core of every agile organization. The ability to act autonomously spurs ownership and creativity, enabling teams to make quick decisions and move fast. But a high degree of autonomy works only when there is also a high degree of alignment in and among teams. A key role of agile leaders is to ensure strong alignment around overall company purpose, strategy, and priorities. Leaders need to communicate their intent, explaining both the why and the what, and they need to let go, releasing their teams to figure out how to address their specific assigned challenge. The more alignment that leaders are able to establish, the more autonomy they can afford to give. Leaders can spread and reinforce alignment in a variety of ways that include modeling their own behavior and strengthening governance mechanisms, measurement frameworks, and performance management practices.

Learn and Adapt—at Speed

Agile puts a premium on feedback and lessons learned: adapting to change is more important than following a plan. This rule applies even to the agile transformation itself. Of course, the transformation must be well thought through and carefully planned, but leaders must also be open to modification and adjustment along the way. Inevitably, there will be setbacks and challenges, but strong leaders are the ones who have the ability to learn, adapt, and change course when things go awry.

Transformations, which are often described as journeys, can take two or three years. We are seeing more CEOs tighten up that time frame—in some instances to less than a year. The biggest counterweight to resistance is momentum, and nothing builds momentum

like speed. Like loosening controls, moving fast can seem risky. But the bigger risk to the transformation lies in not changing fast enough.

Martin Danoesastro is a senior partner and managing director in the Amsterdam office of Boston Consulting Group and the global coleader of agile at scale for the People & Organization practice. You may contact him by email at danoesastro.martin@bcg.com.

Benjamin Rehberg is a partner and managing director in the firm's New York office and the global coleader of agile at scale for the firm's Technology Advantage practice. You may contact him by email at rehberg.benjamin@bcg.com.

Grant Freeland is a senior partner and managing director in BCG's Boston office and the global leader of the People & Organization practice. You may contact him by email at [freeland.grant@bcg.com](mailto:grant@bcg.com).

AGILE STARTS—OR STOPS—AT THE TOP

by Deborah Lovich, Vikram Bhalla, Elizabeth Lyle, and Vinciane Beauchene

SOME LEADERS GET IT. Others need to. For organizations to embrace agile ways of working, their senior executives have to change their ways of working. This isn't as simple as it sounds: agile behaviors are not the behaviors that propelled these people into senior leadership positions in the first place. Unlearning what led to personal success in the past is a tall order.

There's a lot at stake. Entire companies, or divisions of companies, are making huge investments in transformation programs in pursuit of agile's many benefits. These include greater speed, better product and service quality, lower costs, and heightened customer orientation. But if leaders don't change their own behaviors, they will limit the return their companies can realize on their agile efforts.

There's no one model for agile leadership, but more and more, we see successful executives doing four things.

They prioritize, focusing on the few agile behaviors that they see as most important for themselves and their organizations. There is a general set of agile behaviors, but prioritizing those that are most acutely needed for the organization requires self-awareness of the existing culture. Achieving organizational alignment means being able to articulate the priorities in a way that the organization recognizes and can act on.

For example, one European financial institution that converted its entire organization to working in agile ways described the priorities for its leaders in these terms:

- **Openness.** Be receptive to feedback on your own behavior and activities.
- **Trust.** Feel comfortable that not everything will be planned; let trial and error show the right direction.
- **Collaboration.** Go for the greater good of the company, which is not necessarily good for a particular unit.
- **No Ego.** Have everyone speak with one voice—as an organization.
- **Transparency.** Call out those unwilling to change or to reflect the “new world.”
- **Accountability.** Hold one another accountable.

The CEO of a North American bank instructed his top-management team: drive results, adapt and change, unlock people's potential, and speak up for the good of the company rather than your function or division.

They commit themselves to personally acting as role models of behavioral change. It's easier to talk about what needs to change

than to make an actual public commitment to new behaviors. The most effective agile leaders commit themselves to daily “work-outs”—in full view of their colleagues and team members—that involve individual and leadership team action plans. These plans are explicit about how leaders model new behaviors in their own work and routines, what and how they communicate, and how they engage the organization. The plans are specific and timely: for example, “I will push decisions down to the front line, cancel meetings, and instead attend team stand-up meetings to see how I can help every day or week.”

The shift to agile ways of working adds urgency, complexity, and challenge.

At the European financial institution mentioned previously, all the executive team members committed to holding weekly “town hall” meetings in the company café. In addition to providing general business updates and answering questions at these meetings, they spoke about their personal-development agendas. In doing so, they publicized their commitment to changing their own behaviors.

They enable and empower themselves, each other, and their teams. Effective leaders recognize that behavior change doesn’t happen just because they want it to. They seek help—in the form of coaching, feedback, and opportunities—for reflection and skill building. They don’t consider seeking assistance to be a sign of weakness. They understand that to achieve any operational improvement, they need to invest to get results. Coaching and putting real time into changing personal and team behavior are just that—investments in becoming a better agile leader. Effective leaders recognize that others need help and often personally play the role of coach—which is very different from the role of decision maker—for their teams. And in coaching others to work differently, they also reinforce their own new behaviors.

One of the most difficult agile behaviors, especially for those who have grown up in command-and-control and risk-averse organizations, is pushing decision making down to staff closest to operations, processes, and customers. This is the essence of empowerment, but it does not come easy. A senior executive at a global automaker asserts that “the hardest thing is to learn to let go. It’s like when you raise kids: you need to decide when to let go and when to tell them what to do.”

At the same time, good leaders reinforce transparency and accountability. While they empower teams more, they also demand more transparency in each team’s activities—a quid pro quo for agile leaders. A top executive at another European bank told us, “Giving teams space takes discipline, but the short cycle times and guardrails of agile make it easier.” A senior executive at an automaker gives her teams considerable autonomy and empowerment to achieve their goals, such as building an innovative self-driving car. But she also follows a venture-capital-style model of accountability, returning to the team every few months to see results demoed and to provide outside-in feedback.

They champion—and reward and celebrate—new behaviors. Leaders in an agile setting face a continuous change management challenge: to encourage, reinforce, and model behaviors that are unfamiliar to most organizations. These behaviors can include pushing for minimum viable products that test a value thesis over fully finished products, encouraging experiments (even those that most likely will not work at first), and celebrating failures as opportunities to learn and improve. Agile leaders need to change the ways that they celebrate success and the ways that supporting systems, such as performance management, reward desired behaviors. They may also need to make some tough staffing choices, saying goodbye to loyal leaders and high performers who have delivered results in the past but are not exhibiting the required behaviors needed for achieving success in the future.

ADAPTIVE leadership has always been about change. The shift to agile ways of working adds a new layer of urgency, com-

plexity, and challenge. For an organization to transform successfully, its leaders need to develop their own agile capabilities and show the way.

Deborah Lovich is a senior partner and managing director in the Boston office of Boston Consulting Group. You may contact her by email at lovich.deborah@bcg.com.

Vikram Bhalla is a senior partner and managing director in the firm's Mumbai office. You may contact him by email at bhalla.vikram@bcg.com.

Elizabeth Lyle is a principal in BCG's Boston office. You may contact her by email at lyle.elizabeth@bcg.com.

Vinciane Beauchene is a partner and managing director in the firm's Paris office. You may contact her by email at beauchene.vinciane@bcg.com.

AGILE TRAPS

by Grant Freeland, Martin Danoesastro, and Benjamin Rehberg

FROM INDUSTRY TO INDUSTRY, agile is spreading in fits and starts—from the IT department to other functions and, in more and more cases, companywide. Or it is trying to. Lots of companies attempt the transition to agile ways of working but end up with either something that is agile in name only or a hobbled hybrid organization that exacerbates the problems they set out to solve.

Most established organizations like the status quo and fear change.

There's good reason for the interest in agile. When large companies get agile right, the results can be stunning. Productivity can improve by a factor of three. Employee engagement, measured in quantitative surveys, increases dramatically as well. New product features can be released within weeks or months rather than quarters or years. Rates of innovation rise, while the number of defects and do-overs declines.

There's equally good reason for the failures. Agile is hard—really hard. Done right, the transformation affects everything from internal processes to how employees spend their day to how people in the organization inter-

act with one other. It requires rethinking structures, reporting, compensation, and career paths.

But most established organizations like the status quo and fear change. So they try to kill the transformation before it gains traction.

Many management teams understand this, so they're hesitant to take on an agile transformation. Then one company in their industry gets agile right, others see the power of what agile can accomplish when it's done right, and naturally they want to do the same thing. But they tend to overlook the fact that the leader that made the successful agile transformation spent years planning and executing its agile journey. Its top management was fully committed to making the change and was willing to experiment and learn from lots of failures along the way. When the followers don't make the same commitment to planning and execution, they are likely to fall into one of three traps.

Name Only

The name-only trap may be the most common: companies undertake an organizational change that they label agile, but they don't make the kind of fundamental shifts in ways of working—establishing cross-functional teams and institutionalizing a try-and-fail approach, for example—that are the basis of ag-

ile. In large and complex companies, speeding things up means reducing reliance on hierarchies, and leveling hierarchies requires reliance on collaboration. For many companies, this is a big organizational and cultural change, and implementation is difficult. Companies that get it right establish the boundaries within which empowered employees can collaborate and make great things happen. But most companies continue making decisions the way they always have—slowly.

Two Tier

A variation on the name-only trap is the two-tier trap. There are a couple of manifestations. One is that the organization is redesigned around agile ways of working, but senior management continues to do things the way they have for years. Another occurs when a company shifts some functions to agile while other functions continue operating in the old ways of working. In either case, if the transformation is successful, the organization, or parts of it, moves much more quickly and nimbly. But the benefits are lost when the results of agile teamwork—a product innovation, for example, or a faster internal process—run hard into traditional processes and deliberate, drawn-out management approvals. The result is not dissimilar to a sprinter running into a wall—pain and even injury are inevitable.

Half Measures

Companies that fall into the half-measures trap get agile partially right. They are successful at cross-functional reorganization. Multidisciplinary teams start to work in scrums and sprints. But these companies do not follow through with critical organizational enablers such as redesigned career paths and

incentive programs. Employees adopt the new ways of working only to encounter uncertainty about the impact these novel methods will have on them as individuals. The initial enthusiasm stalls. Organizational change is not linear; companies need to reach a critical mass of change in order to reap the benefits. Rather than speeding up processes, decision making, and results, the half-measures trap—like the other traps—leaves the organization less productive than it was before.

GOLFERS will tell you that traps are easy to slide into but hard to hit out of. The key to avoiding bunkers is good planning and better execution. That's the only way to avoid agile traps too.

Grant Freeland is a senior partner and managing director in the Boston office of Boston Consulting Group and the global leader of the firm's People & Organization practice. You may contact him by email at freeland.grant@bcg.com.

Martin Danoesastro is a senior partner and managing director in the firm's Amsterdam office and the global coleader of agile at scale for the People & Organization practice. You may contact him by email at danoesastro.martin@bcg.com.

Benjamin Rehberg is a partner and managing director in BCG's New York office and the global coleader of agile at scale for the firm's Technology Advantage practice. You may contact him by email at rehberg.benjamin@bcg.com.

GOING ALL IN WITH DEVOPS

by Andrew Agerbak, Kaj Burchardi, Steven Kok, Fabrice Lebegue, and Christian N. Schmid

FOR TOO MANY COMPANIES, moving to agile software development is like finding the perfect new strain of grass seed—after months of searching—and then planting the new seeds in your old backyard. Your lawn may ultimately look a little better, but it will take longer and the results won't be as great as they would be if you had first removed the hidden tree roots, put in new soil, and rethought the irrigation system.

When agile's benefits don't come quickly, some wonder if they're missing something.

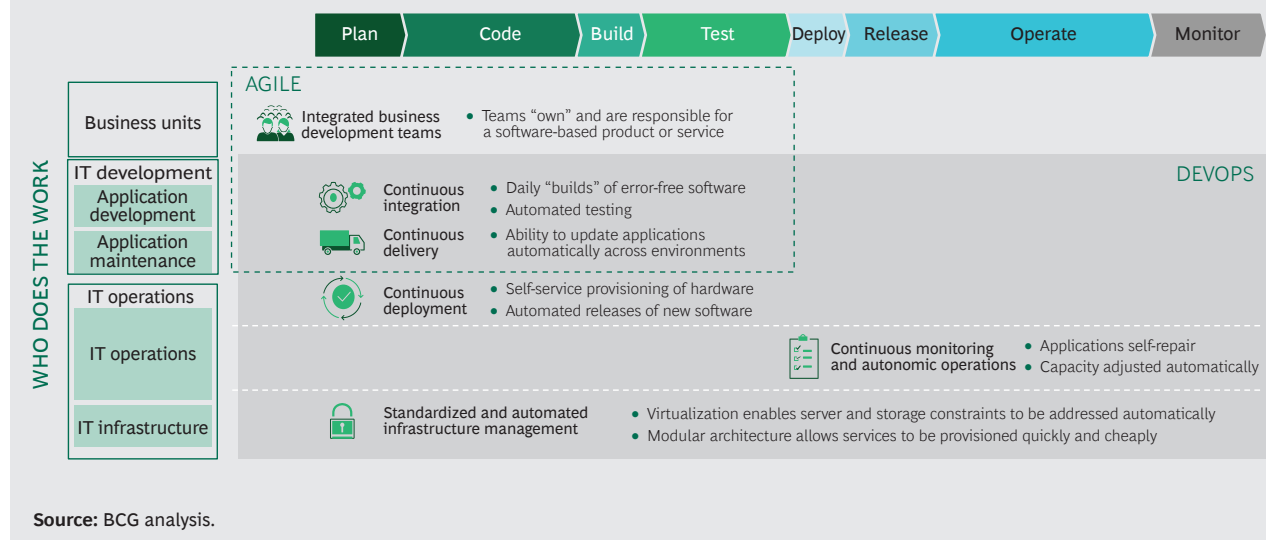
Many mainstream companies—in financial services, health care, manufacturing, consumer packaged goods, and other industries—have felt compelled to give agile software development a try. And they have waited expectantly for the benefits. In theory, agile's assignment of a business leader to development teams ensures that the most important software changes get done first, and its emphasis on short coding sprints ensures that the changes are implemented quickly. The fact that the quick part doesn't always happen has been discouraging. It has some agile newcomers wondering if there's something they're missing.

In many cases, there is. Agile does a good job of breaking down silos early in the software development process. But it can achieve only so much on its own. To turn themselves into digitally ready competitors, companies have to rethink the *entire* software development life cycle. They need agile, but they also need DevOps.

DevOps is an approach that integrates critical late-stage activities—like testing and deployment planning—into the code-writing part of software development. (See Exhibit 1.) With its emphasis on running multiple activities in parallel and on multifunctional teams, DevOps represents a break from the old “waterfall” model, in which planning, writing, testing, and deploying code were discrete steps managed by separate departments.

While many software companies use some form of the continuous software development and release that are the hallmark of DevOps, the approach (which continues to evolve and is starting to be referred to as DevOps 2.0 or BizDevOps by some of its more advanced practitioners) is a lot newer outside the technology and internet services industries. Some traditional companies, notably in financial services, have some DevOps pieces in place, such as automated testing and mechanisms for provisioning hardware quickly. (See “Leaner, Faster, and Better with DevOps,”

EXHIBIT 1 | Where Agile and DevOps Fit in the Software Development Life Cycle



BCG article, March 2017.) But the scope of these practices is limited. The companies haven’t made the overarching changes that would allow them to capture DevOps’ full range of benefits.

Making DevOps Work

To get the most out of DevOps, companies must make changes in controls and governance, IT organization roles, and operating models.

Rethink controls and governance. Most big companies’ approach to developing and releasing software reflects controls they put in place years ago to maintain quality and avoid costly mistakes. The controls may have made sense at the outset. But as the pace of technological change has accelerated, the controls have lost their relevance. Now they’re just obstacles.

For instance, a control about infrastructure provisioning—one of the hurdles that must be surmounted before a development team can begin its work—may have been implemented in the days before virtualization. Today, virtualization makes computing and storage capacity available with less operational complexity than before and at far lower cost. But we still see companies taking a month and 50-plus emails just to provision hardware and gather all the necessary permissions.

Likewise, a control requiring multiple go-live approvals for new software may have been justified when there were only a few software updates a year and each one involved a critical part of a monolithic system. But it shouldn’t require two dozen people to approve a minor tweak—like changing the color of the screen users see.

With software now a key way of addressing fast-changing business and customer needs, the prolonged delays caused by controls that have become irrelevant put companies at a fundamental competitive disadvantage. The delays can pose a reputational risk and even a survival risk if a company is the target of a cyberattack. (See “Develop a Cybersecurity Strategy as If Your Organization’s Existence Depends on It,” BCG article, October 2017.)

Governance is another area that requires adjustments in the move to DevOps. This includes adopting new approaches to funding. In agile, funding isn’t allocated on a project basis: for a set period of time, against a defined set of deliverables. Instead, funding is allocated to critical “products”—like a mutual fund company’s “my account” function or a retailer’s order-and-ship system—that require the attention of teams for many months or even years. DevOps adds complexity by forcing companies to figure out how to allocate some application maintenance and infrastructure costs within the product funding paradigm.

Another area where DevOps should trigger a governance change is in the decision rights related to cloud solutions. In the past, these decision rights belonged to the IT organization, and no one questioned that. But that's changing as more business units create software directly using cloud-based tools.

We saw questions about such decision rights at a company where digital product development teams were pushing for direct access to an Amazon Web Services account, and the IT operations group, concerned about standardization and security, was resisting. In truth, there is no single right answer to the question of where the decision rights should lie, for this company or any other. But it is an issue that must be tackled in DevOps, which redraws the boundaries of software development along multiple dimensions.

If DevOps is to succeed, there must be changes in the role of the CIO and the IT organization.

DevOps should also prompt a change in how companies deal with buggy software. At companies that haven't fully adopted DevOps, there isn't a "you built it, you own it" governance philosophy. Instead, if an issue arises involving software that has been released, IT support teams report it through a ticket system (such as ServiceNow), and the issue becomes the responsibility of an application maintenance team. But the original developer of the code, having gotten wind of a problem, may go back in and try to fix it. The net result is that sometimes both the development and maintenance teams end up working on the same software, at the same time, resulting in inconsistencies, integration problems, and stability issues. By contrast, at companies that adopt DevOps practices, issues with released software automatically register on the backlog of the development teams, which are expected to make the fixes. There is no one further down the line who would even think of fixing the code, and no possibil-

ity of different departments touching the same code simultaneously and working at cross-purposes.

Ultimately, the best test of governance practices is cycle time. If companies can substantially reduce the time between when they plan software and when they release it in a reliable, high-quality form, that is a sign that their governance processes are working and that they have the technical capabilities they need.

Redefine the role of the CIO and the IT organization. If DevOps is to succeed, there must be changes—some subtle, some more dramatic—in the role of the chief information officer and the information technology organization. In companies that adopt agile models, the specifications for new software—and the coding work itself—become the implicit responsibility of business units. If this relieves the CIO of responsibility for individual lines of code, in most cases he or she still shoulders the larger burden of quality. That is, the CIO must still recruit and train software developers. He or she must also put in place a better delivery model, one that includes an operating environment—standards, services, processes, tools, and infrastructure—that allows developers to maximize their productivity. The CIO must also front-load more activities in the software development life cycle.

The term of art for this sort of front-loading is the "shift left," referring to how one would diagram various activities on a software development life cycle chart. In DevOps, technical staff that would once have sat in the IT operations function—whose work kicks in later—are moved into the product development teams, where they have a say in how the code is built. There should also be input early on from those responsible for a company's data architecture and cybersecurity. The shift left of activity and expertise is one way all the code that's being created—often in many different business units—can get to market quickly and with the necessary level of security.

A particularly important CIO responsibility with DevOps is the implementation of an optimal infrastructure environment. The business-oriented development teams need infra-

structure-independent platforms so that they don't have to worry about compatibility. In DevOps, managing this and providing the application development toolkit are significant parts of the IT organization's responsibility.

Netflix, the global streaming video service, provides an example of the kind of benefits that can come from embracing DevOps. Netflix captures these benefits through the efforts of a central engineering operations group (a sort of specialty IT team) whose mandate is to maximize the performance of newly released software and to make software development teams more efficient.

At Netflix, developers benefit from a common set of tools, services, and infrastructure management capabilities—a “paved road,” as Netflix calls it—to traverse the normally bumpy path to new software creation. The

paved road and the engineering operations group have been instrumental in helping Netflix release new code—secure, reliable code—to multiple geographic regions within minutes.

Assisting and speeding up software deployments in this way require IT staff to develop skills they didn't need previously. For instance, enterprise architects must take a much stronger hand in defining IT architecture strategy, especially with respect to platform options. And IT organizations must adopt technical mechanisms—like containers and microservices—that allow coding teams to write reusable software and to do it faster. (See the sidebar, “DevOps' Technical Underpinnings.”)

IT organizations must also acquire some brand-new technical capabilities. For in-

DEVOPS' TECHNICAL UNDERPINNINGS

IT staff must be familiar with various technical tools and approaches in order to implement DevOps. Here are seven of the most important.

Containers. A type of virtualization that keeps software running reliably when it is moved from one computing environment to another. By bundling new code with everything needed to run it, a container makes it possible for software development teams to ignore differences in operating systems and underlying infrastructure. Two open-source technologies that help with containerization are Docker and Kubernetes.

Microservices. A programming architecture that gives developers access to application functionality at a very granular level. Microservices make it easier to continually deliver and deploy large and complex applications.

Code Repository. A database containing the source code of an application. When centralized and actively managed, code repositories improve the consistency and stability of code, and help avoid version

control issues. Among the open-source tools used for code repositories are Bitbucket and GitLab.

Continuous Integration. A development practice that promotes single-source code management and comprehensive automated testing, allowing developers to add code to a common repository as often as several times a day, in a highly automated way. This ensures that all development teams are using the latest version of an application. Open-source versions include GitLab CI and Jenkins.

Continuous Delivery. A discipline for building software that enables the software to be moved to a staging area at any time. Continuous delivery tools include Bamboo and Jenkins.

Continuous Deployment. A practice that allows tested software to be released, sometimes with not much more than the push of a button. Continuous deployment sharply reduces overhead and can be an invaluable tool for resolving issues quickly.

stance, they must hire or develop quality engineers. These engineers should be embedded in the software development team and should ensure that rigorous testing happens early in the process. The IT operations staff must likewise acquire or develop new expertise, such as reliability engineering and infrastructure service development. Without these capabilities, continuous delivery and continuous integration aren't possible, making agile's promised speed and reliability benefits hard to achieve.

Remake the operating model through automation. There is a huge benefit if, instead of going through a cumbersome approval process that might last weeks or months, a team can add a feature or plug a dangerous security hole with relatively little organizational oversight, and in the best case with just a few mouse clicks. Automation, one of the pillars of DevOps, makes that possible. But the decisions surrounding automation are complicated, and there is always the chance that a company will take a while to gain its footing. For this reason, the where and how of introducing automation is a key decision for any company moving to DevOps.

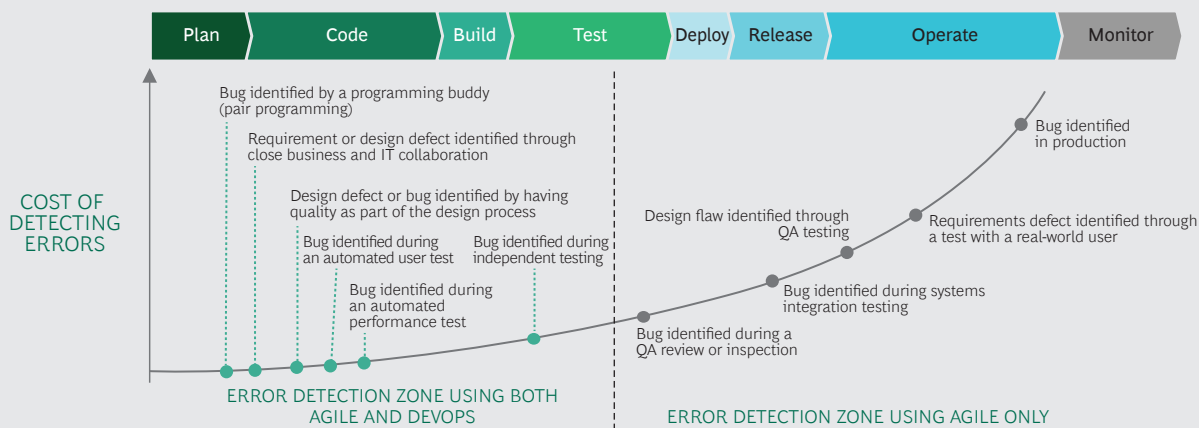
A good place to start is with test automation. In our experience, the benefits of covering more new code through automated testing can on its own justify a move to DevOps. Consider the ever-present risk of late-stage delays and the costs they create. With traditional wa-

terfall and even sometimes with agile development, testing takes place once the code is complete. Significant problems may be discovered just as the code is supposed to go live. By contrast, in the DevOps paradigm, code is developed iteratively and tested regularly. This makes it less likely that coding issues will emerge at the last minute. (See Exhibit 2.)

Valuable as it is, automated testing must be rolled out in stages. Companies should start with the parts of their architecture where they have already begun to transition to agile models. After they've had some success, they can use automation to cover more of their code.

Some of the companies that have set the pace in digital services, such as Google, have reliability targets well above 99%—meaning that they expect the software they release, with the help of automated testing, to work immediately and in pretty much all instances. Google, of course, was built to enable rapid software releases and service improvements. Companies that aren't digital natives don't need to ensure reliability on the same scale, but when it comes to digital services they can learn from Google and other digitally advanced companies—and they must. After all, a traditional company with a mission-critical digital application—like a financial services company rolling out a smartphone payment feature—can no more afford to release bad software than Google can.

EXHIBIT 2 | With DevOps, Bugs Are Spotted Earlier and Fixed More Economically



Sources: Puppet, 2016 State of DevOps Report; BCG analysis.

With traditional companies' legacy systems, such as payroll or enterprise resource planning, the dynamics are necessarily a little different. Companies can still do automated testing of their legacy systems, and in many cases they already do. But in order to support the faster release cycles agile development teams expect, the tests should be synchronized with batch processes, including prescheduled data transfers and transactions. Since batch processes are often designed to take place overnight, the IT organization may want to run the automated tests overnight, too.

Getting Started

Companies can't just brush aside their current software development practices and make a wholesale move to DevOps; it involves too much change and training and would create too much disruption with existing systems and products. DevOps needs to be phased in.

It should be possible to see benefits from a DevOps pilot within six months.

The first step should be to find an application that has low levels of dependency with other applications—perhaps a procurement portal for a manufacturing company or a savings platform for a bank—and run a pilot project to learn the DevOps model and fine-tune the practices.

In the pilot, a team of developers and IT engineers lays out a technical plan—establishing a central code repository and creating a testing framework so that testing automation can start. Once this is in place, continuous integration and continuous delivery can begin. These processes make it possible for the development team to focus on writing code and not on manually checking for bugs and functionality problems.

At companies with complex legacy systems, continuous integration and continuous delivery are two separate phases. By contrast, at

digital natives, both approaches are core to software development, and a digital native may already be thinking about other ways of enhancing the software release process. This explains why developers at the most digitally adept companies often see their code fixes go live within days, hours, or even minutes.

The DevOps pilot needn't go on indefinitely. Within six months, it should be possible to see benefits. These typically take the form of agility, which translates into more software releases per week; quality, which stems from increased testing coverage; and efficiency, in the form of lower costs of rework and an overall increase in the number of automated processes. After an introductory period like this, the company can create a roadmap to start applying DevOps practices to other software and infrastructure platforms and to other parts of its technology environment. The roadmap should include a decision about the suite of tools to be used and the sequence in which DevOps will be implemented in other parts of the company and for other platforms.

DevOps and the Customer

The example of a European travel company helps demonstrate why DevOps is turning into a must-have.

The company was unable to make pricing updates to its core booking system at the height of its main selling season. Previous updates had exposed the fragility of the system, and business managers had imposed a policy of no changes during peak periods.

There was nothing unusual about the company's monolithic software infrastructure or the policies to accommodate it. However, the deliberate approach to software development had left the company unable to respond, at the most important time of year, to new pricing or product propositions from competitors. If a seven-day trip to Belize was suddenly being discounted to \$1,800 on other travel websites, it would still be going for \$2,100 on the company's site. Dynamic pricing updates required a software change, but the company's release process limited the speed at which such changes could be made.

Recognizing that its software development processes were hurting the business, the company adopted some DevOps practices, including continuous integration. As it did so, the quality of its software releases and the overall resilience of its system improved to such an extent that management lifted the change freeze. Thereafter, the company was able to be much more responsive to competitors' moves during the industry's peak selling season.

Sooner or later, most companies are going to find themselves in a similar position. That is, they are going to see that one of their competitors is doing something faster, with fewer security and quality issues, and at lower cost. And they are going to need to take action to narrow the gap.

DevOps is a way to do this. The implementation of DevOps involves organization and process changes that take place well out of sight of most customers. But customers will be expecting the benefits. For companies that don't deliver, there may not be a second chance.

Andrew Agerbak is a director in the London office of Boston Consulting Group. You may contact him by email at agerbak.andrew@bcg.com.

Kaj Burchardi is a managing director of BCG Platinion in Amsterdam. You may contact him by email at burchardi.kaj@bcgplatinion.com.

Steven Kok is a project leader in BCG's London office. You may contact him by email at kok.steven@bcg.com.

Fabrice Lebegue is a managing director of BCG Platinion in Montreal. You may contact him by email at lebegue.fabrice@bcgplatinion-maya.com.

Christian N. Schmid is a principal in BCG's Munich office. You may contact him by email at schmid.christian2@bcg.com.

TAKING AGILE WAY BEYOND SOFTWARE

by Michael Sherman, Stephen Edison, Benjamin Rehberg, and Martin Danoesastro

FOR MOST COMPANIES, AGILE is confined to software development—but it doesn't need to be. Increasingly, forward-thinking companies are taking advantage of the same agile techniques that have transformed software development. Now they are successfully deploying these techniques in other core business units, from marketing to human resources to finance. When companies implement agile across their entire organizations, ways of working improve dramatically. Agile methods are more collaborative and creative and can be more efficient than other business models. But companies must first understand why their current business structures need to change.

The Downside of Traditional, Specialized Roles

Most large, hierarchical organizations are structured around silos and specialized functions. It's not uncommon to see companies organized in such a way that a single customer need (such as processing an order) requires action from more than ten distinct units. But this model introduces a number of inefficiencies:

- **Queuing Delays.** Handoffs from one specialized employee to another create internal queues; each order or task slowly churns through the system in a linear fashion, delaying the speed of end-to-end customer service.

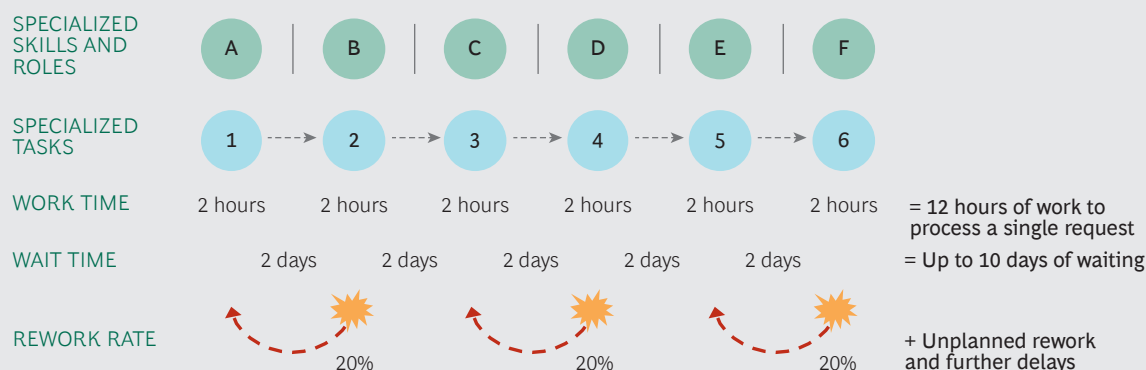
- **Rework.** Each time there's a handoff from one specialized worker to another, the chance that rework will be required increases because individual employees responsible for a single isolated task have little understanding of how their work fits into the larger whole. This rework culture can be especially problematic in complex environments where errors in the details can create big problems later in the process.

Agile techniques don't have to be confined to software development.

- **Lack of Ownership.** When individuals are assigned only discrete tasks, no one is ultimately responsible for the customer outcome. This generates frustration for customers because finding the right person to fix a given problem may be nearly impossible.

Companies that rely on overly specialized roles create meaningful inefficiencies that can damage the customer experience. (See Exhibit 1.) Customers forced to endure delays owing to multiple handoffs or rework will soon take their business elsewhere. Yet many

EXHIBIT 1 | Specialized Roles Create Rework and Delays



Source: BCG analysis.

large companies find restructuring difficult because their organizations are bogged down by a large and highly customized product catalog, disparate IT systems, or poorly integrated M&A activity—all of which bolster the need for specialized resources. While displacing deeply entrenched processes and practices can be difficult, companies that successfully incorporate agile beyond software see transformative results.

Getting Started

To implement agile across an entire business, teams need to work together differently than in the past. Siloed employees no longer perform discrete, predefined tasks in isolation. Instead, cross-disciplinary, collocated teams collaborate in innovative ways to enhance the customer experience. By working iteratively and incorporating feedback to continually improve, agile teams across all functions have the potential to transform the business from the inside out. To capitalize on the many benefits of agile, companies need to take four key actions.

Create cross-functional teams. To get started, organizations should create cross-functional teams of approximately five to ten employees each—small enough to collaborate closely but large enough to possess the necessary skills to execute successfully. These agile teams perform a given process from beginning to end, batching tasks to increase productivity and parallel processing to maintain forward momentum. Individual employees handle multiple steps to reduce

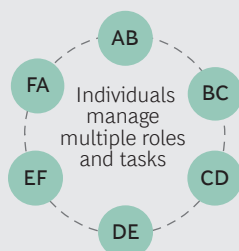
overall work time and avoid the delays that come from excessive context switching. With brief, regular interactions, the teams resolve questions quickly rather than throwing issues back over the wall.

Because many companies are still organized around highly specialized functions, however, the shift toward agile often requires consolidation—from large numbers of specialists to small teams of cross-trained individuals. In a cross-functional team, for example, one employee may tackle tasks A and B, which were previously handled by two employees. (See Exhibit 2.) Over time, as employees undergo additional cross-training, roles can be further consolidated. Of course, role consolidation has its limits. In some areas, specific expertise is required (in the case of a lawyer or specialized engineer, for example). But these specialists should work with cross-functional teams to support customers. By reorganizing into these more productive teams, organizations can dramatically reduce the number of employees necessary to fulfill a request, eliminate inefficient handoffs, and improve visibility into their customers' needs.

Recently, an international telecom company transitioned to cross-functional teams in its enterprise order-processing function to help improve customer satisfaction while reducing costs. Historically, the company had routed customers through 12 specialized groups, each dedicated to a discrete task, but this process led to costly delays and frustrated customers. And to make matters worse, the spe-

EXHIBIT 2 | Agile Teams Are Cross-Trained to Manage End-to-End Processes

CROSS-FUNCTIONAL TEAM ROLES



Number of tasks managed in parallel by cross-trained individuals

Work time

Wait time

Rework rate

CROSS-FUNCTIONAL APPROACH TO TASKS: AGILE TEAMS USE PARALLEL PROCESSING AND TASK BATCHING TO REDUCE DELAYS AND REWORK



Source: BCG analysis.

cialized groups were located in different parts of the world, which only exacerbated delays and rework. Instead, the organization created small agile operations teams responsible for end-to-end customer service. Each operations team comprised three smaller groups: order administrators, technical staff, and billing and customer service personnel.

These teams were not just an oversight layer. They performed the full scope of work—including ordering, provisioning, billing, and support—that previously had been fragmented across the organization. By holding the teams accountable for outcomes, the company gave them strong incentives to reduce complexity, eliminate handoffs and rework cycles, and continually streamline the customer experience.

Cultivate servant-leaders to drive value. As teams shift their focus toward the overall customer experience, leadership styles need to shift as well. Leaders should no longer assess individuals on their ability to complete tasks but on their effectiveness in delivering end-to-end outcomes for customers. (See the sidebar.) To support this new structure, companies would do well to cultivate servant-leaders—that is, leaders who focus first and foremost on helping their employees perform optimally and collaborate effectively. The goal of these leaders should be to foster a motivated and empowered workforce and to help remove impediments to rapid progress. They may set a direction, but they don't delegate or micromanage day-to-day decisions.

Adopt—and tailor—standard agile methods.

One of the most valuable benefits of agile is that it encourages teams to iterate quickly, learn from feedback, and shift course as needed, rather than adhering to a strict plan. The following agile methods, among others, can be used to reinforce the right behaviors and maintain strong forward momentum:

- Agile ceremonies—such as standups (daily meetings), sprints (brief work efforts designed to deliver a minimum viable product), and retrospectives (reflections on prior sprints)—allow teams to identify critical customer needs, brainstorm solutions to challenges, and target areas for improvement. By tracking processes all the way through to the customer outcome, organizations can enhance operations at all stages—from R&D to launch to customer care.
- Agile backlogs and dashboards can be used to organize work and track progress, enabling teams to prioritize tasks, eliminate bottlenecks, and identify automation opportunities.
- Agile techniques, such as A/B testing and a test-and-learn approach, encourage teams to analyze user data and focus their priorities accordingly.

Many best-in-class marketing organizations have begun to use agile techniques to expedite the development of new initiatives. (See *The Agile Marketing Organization*, BCG Focus,

A EUROPEAN BANK DELIVERS AGILE END-TO-END SOLUTIONS

A European financial services company created a new organizational model, inspired by Zappos, that empowered small, autonomous units to deliver end-to-end solutions for all nondigital customer service requests, particularly phone calls.

Instead of optimizing the call center and customer service operations for scale and efficiency (with a focus on average handling time, for example), the bank focused on enhancing customer satisfaction. It created customer loyalty teams (CLTs)—autonomous, multidisciplinary, collocated teams of 10 to 12 members—and gave them a mandate to resolve issues on the spot.

CLT members were assigned broad roles so that they could switch between answering

customer calls and handling operational tasks. The company empowered them to self-schedule availability as a team and closely track output metrics related to customer satisfaction. Traditional manager responsibilities were redistributed to CLT leads, agile coaches, and the team as a whole. To support the new way of working, the bank also addressed talent development in areas such as recruiting, training, and performance management.

As a result, the company improved its net promoter scores, reduced handovers and repeat call volume to achieve 25% efficiency gains, and significantly boosted employee engagement.

October 2015.) For example, some leading organizations appoint a scrum master, who leads rapid sprints to develop integrated marketing initiatives, apps, and websites. Each day, the team holds a 15-minute standup, in which members brainstorm ways to unblock activities and keep one another on track. Along the way, team members test and learn from experiments and, finally, determine what they can accomplish in the next sprint. These techniques can dramatically accelerate the pace at which marketing organizations innovate—and teams have much greater awareness of their overall impact on the business and its customers. While agile ceremonies alone won't make an organization agile, they can certainly encourage the right behaviors on a daily basis.

Automate relentlessly. While all the actions outlined thus far can improve the customer experience, they won't necessarily lower costs. To do that, teams need to find ways, where possible, to automate the end-to-end process. Every time team members must perform a high-frequency manual task, they should explore options for automating the process to eliminate inefficiencies. Agile teams can also analyze the ways in which cus-

tomers use various digital channels and develop self-service options to streamline interactions. Automation not only reduces the overall volume of work that needs to be completed, it allows teams to become more productive, freeing up capacity for more innovative endeavors.

The international telco described earlier created a group focused exclusively on automation. By dedicating a team to automation, the company identified obstacles that slowed cycle times and discovered numerous opportunities to automate processes, enhance systems, simplify products, and introduce self-service tools.

In the digital era, every aspect of business needs to move faster than ever before. Companies need to accelerate implementation of initiatives, eliminate costly delays, and continually improve the customer experience. Agile has a proven track record in all these crucial areas. By taking agile way beyond software, organizations have the opportunity to enhance their understanding of customers' needs. As a result, they not only reduce the complexity of internal operations but also

create powerful opportunities to win customer loyalty and significantly outperform their peers in the marketplace.

Michael Sherman was a partner and managing director at Boston Consulting Group.

Stephen Edison is a principal in the firm's Dallas office. He is a member of the Technology, Media & Telecommunications practice. You may contact him by email at edison.stephen@bcg.com.

Benjamin Rehberg is a partner and managing director in BCG's New York office and the global coleader of agile at scale for the firm's Technology Advantage practice. You may contact him by email at rehberg.benjamin@bcg.com.

Martin Danoesastro is a senior partner and managing director in the firm's Amsterdam office and the global coleader of agile at scale for

the People & Organization practice. You may contact him by email at danoesastro.martin@bcg.com.

NICK JUE ON TRANSFORMING ING NETHERLANDS

AN INTERVIEW WITH THE CEO OF ING GERMANY

With fintechs and other new players disrupting the financial services sector, traditional institutions need to be faster and more flexible than ever before. ING Netherlands is one bank that responded to the new market dynamics by adopting agile practices, completely changing the way it works.

Nick Jue, who has been with ING since 1993, is currently the CEO of ING in Germany. In his previous role as CEO of ING Netherlands, he introduced an agile way of working in order to best position the company to respond to new competitors and find new sources of advantage in a rapidly changing world.

Nick spoke with Martin Danoesastro, a senior partner and managing director in Boston Consulting Group's Amsterdam office, about the reasoning behind and the results of the company's transformation, and the key success factors. The following is an edited version of their conversation.

You successfully led ING Netherlands through three different transformations. What were the key success factors across those transformations?

In every transformation, one of the key elements is having a very inspiring vision, because you have to explain exactly what this transformation will bring to employees and customers. They have to understand why it's important to do it and be inspired by it.

Another element is having a fact-based case for change. You have to know what it means for your margins and your volumes, and what it will bring in different economic scenarios. Facts make your case for change very powerful.

NICK JUE

AT A GLANCE

- Year born: 1965
- Married, two daughters

EDUCATION

- Cedep, INSEAD at Fontainebleau
- Master of marketing, Tilburg University, the Netherlands
- Master's degree in business administration, Erasmus University Rotterdam, the Netherlands

CAREER HIGHLIGHTS

- 2017 to present, CEO, ING-DiBa AG; head of ING in Germany, Austria & Czech Republic
- 2010–2017, CEO, ING Netherlands
- 2006–2010, CEO, ING Retail Netherlands
- 2005–2006, general manager, corporate communications and affairs, ING Group
- 2003–2005, head of corporate communications, ING Group
- 2002–2003, board member, ING Insurance Belgium



Last, you need a strong team to get through a transformation. You can have a lot of discussions and a lot of debates throughout the process, but when you get into execution mode you need a team that fully supports the vision and really goes for it.

In your most recent transformation, you completely changed the culture and way of working to agile. And I remember that you used the analogy of a large elephant racing against greyhounds to illustrate what ING Netherlands had gone through. Why is that?

This picture of an elephant being chased by greyhounds is exactly how people look at banks. People view banks as big, inflexible animals, and they are chased every day by “greyhounds” such as fintechs and other new companies.

What I try to do is train our organization, the elephant, to be as fast and as flexible as a greyhound. I want to remain an elephant, because I want to keep the power of the elephant. But I also want to be fast and flexible.

Why would a bank want to be as fast as a greyhound?

The world around us is changing rapidly. We’re not competing just against the traditional institutions, so to stay relevant to our customers we need to innovate. With the switch to internet banking and mobile banking, the preferred channel for customers has changed, and the number of customer contacts has exploded.

So with new technology and new competitors, we really had to change very quickly. Clinging to the past was not going to make us future-proof.

But as the world around you is changing so rapidly, how do you know which direction to take?

That was exactly the question we asked ourselves. If you don’t know the direction, which one do you take? Do you jump on every new development? Do you pick one and just go for it?

“Look outside for inspiration, think boldly, and dare to change.”

Alternately, you can adapt your organization in such a way that you’re flexible if trends change, and you can adapt very quickly. I think we came to the conclusion that the only way to do this is to become agile, to start the agile way of working. This was the only way to be able to adapt very quickly to trends and developments.

What did you try to change about the way of working in the organization?

There are a few things. One of them is collaboration, and what I mean by that is removing obstacles so that teams and individuals can work more effectively together.

Another thing is empowering people, giving people a higher level of responsibility. People can decide things themselves, so they feel more empowered and more passionate.

And last but not least, I would say culture. Next to structure and organization, you need a strong culture—and you need to implement it in every detail in the organization.

ING Netherlands was one of the first traditional companies to

completely transform to an end-to-end agile way of working. What advice do you have for companies who want to change their way of working as well?

BCG took us to Zappos and Spotify, companies completely outside our own industry, and they inspired us in the way they did

things. Subsequently, BCG helped us by designing and implementing a model based on the inspiration we got from those companies.

Next to that, I would say: think boldly and dare to change. When you start a change process to become more efficient and improve the company and you aim for 5%, at the end the outcome will be incremental. If you start the whole change process with the idea of improving by 50%, then you probably will end up around 40%—but it will be much more than the outcome from the other approach.

So my advice to anyone going through this process would be to look outside for inspiration, think boldly, and dare to change.

Martin Danoesastro is a senior partner and managing director in the Amsterdam office of Boston Consulting Group and the global coleader of agile at scale for the People & Organization practice. You may contact him by email at danoesastro.martin@bcg.com.

WHEN AGILE MEETS REGULATORY COMPLIANCE

by Norbert Gittfried, Erik Lenhard, Walter Bohmayr, and Claus Helbing

DELIVERING REGULATORY PROJECTS IS always a high-stakes proposition for banks. Faced with an ever more demanding compliance environment, banks today are investing extraordinary amounts of time and money in such projects. The average bank spends approximately 40% to 60% of its change budget on regulatory compliance—but squanders a significant portion of this investment on inefficiencies. As regulations continue to expand, companies need to fundamentally change their approach.

A new agile model offers banks a promising alternative approach. The perception among bank executives—and among their board members—is that using agile methods on multiyear, multi-million-dollar regulatory compliance projects is both risky and impractical. From our experience with clients, we believe this perception is false. We estimate that using the agile approach could cut banks' IT spending by 20% to 30% and could significantly improve their ability to deliver regulatory projects on time.

An Outdated Model

Banks are naturally conservative in their approach to regulatory compliance—and with good reason. Serious failures can result in fines, regulatory constraints, legal action, and damage to a bank's reputation. But as regulatory requirements continue to expand in

scope, the traditional model of regulatory compliance is less effective and is looking increasingly outdated. For most companies, a rigid, sequential approach to software design and development is commonplace, but it leads to extraordinary waste in a large majority of regulatory projects.

Using the agile approach could cut banks' IT spending by 20% to 30%.

Take the European Union's Markets in Financial Instruments Directive (MiFID) 2. This directive—which aims to change how stocks, bonds, derivatives, and commodities are traded, cleared, and reported—began as an 80-page level 1 piece of legislation. The legislative process has faced numerous delays, and the level 2 requirements for MiFID2 ballooned to more than 5,000 pages. The traditional approach to regulatory projects is not ideal for implementing this type of directive because its inflexible methods can result in waste. Banks get bogged down in the requirements phase, attempting to address every possible contingency, when they don't have all the information necessary to do so effectively. As new requirements are announced, scope creep becomes impossible to avoid, and

teams must go back to the drawing board to reframe the requirements—all while pushing to create interim solutions so that they don't fall too far behind on deadlines.

A New Model

The new agile model can be an extremely effective tool to help banks navigate the unexpected twists and turns that come with regulatory projects—and these large-scale IT endeavors cry out for agile:

- The projects are expensive and high risk.
- They have tight, indisputable deadlines.
- Regulatory requirements are unclear at the beginning, open to interpretation, and evolve over time.
- Each new regulation requires a novel technical solution that touches many applications, systems, and departments.
- Overdelivery is common—and costly to organizations.

But agile is not a quick fix. It introduces new ways of working that some employees may find uncomfortable at first, such as short iterations that enable teams to spot errors and react to changes quickly, collaboration in multidisciplinary teams, and full transparency and accountability. Nonetheless, these principles can be extremely effective in transforming banks' responsiveness to regulatory changes. (For an overview of agile principles, see the sidebar.)

To use agile successfully on complex regulatory projects, organizations need to give special attention to several key aspects of the implementation. Companies that can master these best practices have an opportunity to accelerate ahead of their competitors and improve the effectiveness of their approach to regulatory compliance.

Create a core team. When planning for and implementing regulatory projects, many organizations make the mistake of creating an overly large project team. In most cases, this group includes many business and IT

members who aren't needed on a regular basis, which wastes time and diminishes the team's focus. Instead, a small but fully dedicated core team of experts can work much more effectively, drawing on business and IT resources only when needed. With a stable, core team—led by a strong product owner—all stakeholders gain much greater transparency into the areas where the team has made progress, tasks that remain to be done, and impediments to completion.

To provide support to the core team, companies should consider establishing a separate acceleration team that focuses on resolving conflicts and addressing barriers to implementation (by ensuring that teams have the proper tools to work efficiently, for example). Particularly with large, complex regulatory projects, rapid issue resolution is essential.

A small but fully dedicated core team of experts can work effectively.

Prioritize and groom the backlog. Over the past five years, the number of new regulatory requirements has tripled globally. (See Exhibit 1.) While this number can easily reach into the hundreds per day, companies must prioritize the top 20 or 30 items in the backlog. By doing so, they can quickly build an end-to-end plan for incremental delivery. And they can easily determine which features are essential to meet the regulatory requirements. Prioritizing the backlog to eliminate nonessential items can produce substantial savings. In our work with one bank, we discovered that only 40% of the hundreds of millions of euros that project teams requested for regulatory projects were essential to compliance.

Divide requirements into clearly identifiable pieces. Teams should break down regulatory requirements into clearly defined, manageable chunks that can be delivered independently. In this way, they can continually deliver key portions of the requirements

AGILE PRINCIPLES IN PRACTICE

So what does it look like to apply agile principles to regulatory projects?

- **Iterative.** Instead of creating an exhaustive list of requirements and detailed action items upfront (which are bound to change over time anyway), agile teams implement key functionality as an iterative process—drastically reducing the delivery risk and maintaining flexibility in scope as the requirements evolve.

This doesn't mean companies should not gather and detail requirements, but they should identify the specific action items just before implementation because this is where agile teams can achieve meaningful efficiencies.

- **Value Focused.** Relentless, continual prioritization of features according to transparent and fact-based criteria can help teams focus their time and effort on mission-critical elements first. This approach allows them to deliver the minimum viable product as early as possible and to supplement it over time as needed while minimizing costs.

Keeping the focus on value is particularly advantageous for regulatory projects, where companies tend to devote substantial resources to excessively large, overly expensive solutions when a simple, quick fix would suffice.

- **Cross-Functional.** Agile teams include members from all the relevant functions, such as business, IT, risk management, and legal. Each individual is fully dedicated to the team's mission. They

work in close collaboration with one another, minimizing time-consuming hand-offs to accelerate end-to-end delivery of workable solutions. Teams also continually improve their processes, which increases their productivity over time.

- **Accountable.** The single most important element of a functional agile team is the product owner, who has the power to make decisions about scope, timing, budget allocations, and product features. (See "Agile Development's Biggest Failure Point—and How to Fix It," BCG article, August 2016.)

Designating a product owner is particularly important for managing the extremely complex requirements inherent to regulatory compliance projects. Because the product owner serves as a single touch point for key units, such as operational risk, financial risk, and legal teams, this person plays a critical role in the overall success of any regulatory project.

A strong product owner who is dedicated to the agile team will immediately boost the team's productivity.

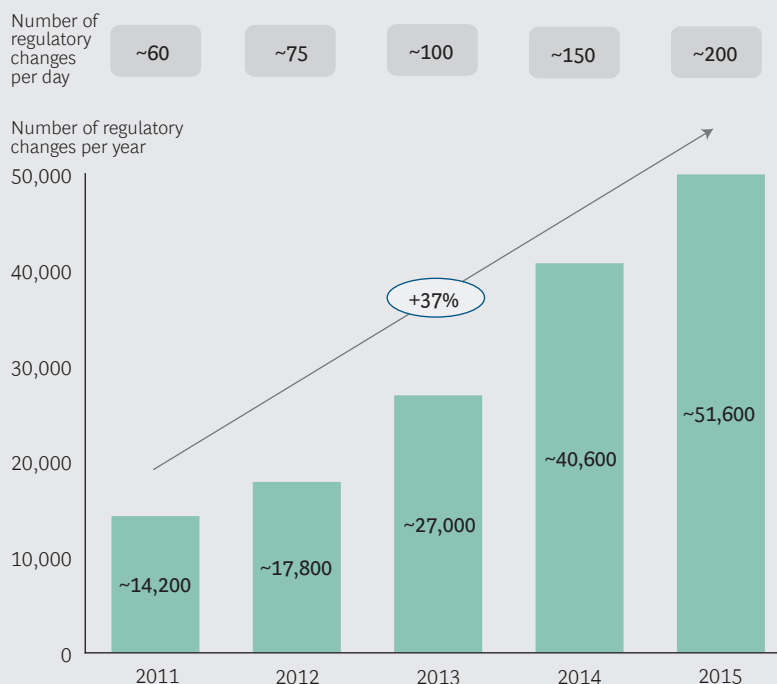
- **Flexible and Incremental.** With regulatory projects, a hard deadline and fixed budget may be mandatory, but maintaining flexibility is critical to a successful implementation. As regulatory requirements shift, agile teams prioritize features that offer the most value, launch short iterative development cycles, and deliver incrementally.

rather than attempting to deliver the entire project in one massive push. Some organizations have established a central design authority to manage the backlog of requirements by identifying new ones, breaking them down into individual items for each impacted area, and incorporating them into

the backlog. This approach benefits the agile team because the design authority analyzes a regulatory requirement just once, streamlining the overall effort.

Stay in sync with the regulator. It's a fact of life for financial institutions that regulations

EXHIBIT 1 | Over Five Years, Newly Published Regulations Tripled



Sources: *Cost of Compliance*, Thomson Reuters; *Financial Times*.
Note: Data covers regulatory changes worldwide.

imposed on banks change over time. When this happens, banks are left scrambling to address unforeseen changes—under extremely tight deadlines. Knowing which requirements to implement and in what order can be difficult. For this reason, the standard sequential approach often requires substantial modifications, and absent such changes, this approach may lead teams to miss crucial deadlines. Instead, teams should strive to quickly create a minimum viable product, test it, learn what works, and iterate until it meets the requirement.

To best achieve this, the product owner must stay in regular and close contact with the regulator, not only to ensure that the team integrates regulatory changes into the project's backlog but also to recognize when the regulator is satisfied. One European bank had great success with this approach. The bank's agile team invited the regulator to attend major events, such as sprint reviews. By participating in these discussions, the regulator gained full visibility into how the bank was progressing and provided valuable input to the agile team. At times, when the regulator

determined that the team's results were sufficient and that further implementation would add limited value, the regulator was even willing to adjust certain requirements.

Generate trust by maximizing transparency.

Because serious mistakes on regulatory projects can have ruinous consequences for individual employees, board members, and organizations as a whole, building a culture of trust and transparency is extremely important. This process starts with board members, who must understand why and how agile is used in regulatory projects and fully support the approach. It also requires trust among employees, who may be accustomed to managing a discrete portion of a project and now must work collaboratively to resolve challenges, bypass roadblocks, and take responsibility for the entire project. Finally, it requires trust across units, so teams can work collaboratively toward the same overarching goal without fear that other units will pass the buck. Teams must provide full visibility into project status, including milestones, backlog size, delivery schedule, and key obstacles. Developing a series of shared

goals is also helpful, to ensure that everyone is moving in the same direction.

Would Your Regulatory Projects Benefit from Agile Methods?

Numerous conditions may suggest that a bank's regulatory projects would benefit from agile methods:

- The regulatory requirements are not viewed as stable and will likely change over time.
- The bank has a limited track record of successfully deploying complex, cross-functional projects that touch multiple systems and platforms.
- Some key stakeholders doubt that the organization can successfully deliver projects with the current delivery model or fear that regulatory projects will have a negative impact on other important projects in the pipeline.
- Although the bank has developed an extensive and detailed list of functional and nonfunctional requirements, most are stuck in the concept development phase.
- The organization has never successfully delivered an end-to-end functional requirement related to regulatory demands.
- The underlying IT architecture is modular enough to allow for partially independent releases in certain applications.
- The organization has had at least one successful experience working with agile, and senior leaders are willing to embrace a new model.

This is not intended to serve as a checklist—but rather to present a variety of conditions where agile is ideally suited to help organizations surmount obstacles and achieve success.

REGULATORY requirements inevitably evolve, and banks need the flexibility to respond effectively; otherwise, they may waste an enormous amount of resources. Or-

ganizations with a positive track record of delivering complex projects via traditional regulatory compliance methods may not need agile. But for the majority of banks that are struggling to implement regulatory projects on time and under budget, agile offers extraordinary benefits.

***Norbert Gittfried** is an associate director in the Frankfurt office of Boston Consulting Group and a core member of the risk, regulation, and compliance team. He is the global topic coordinator for regulation and accounting as well as a regional topic coordinator for compliance. You may contact him by email at gittfried.norbert@bcg.com.*

***Erik Lenhard** is an associate director in the firm's Munich office, a core member of the Technology Advantage practice, and a member of BCG's software and agile leadership team. You may contact him by email at lenhard.erik@bcg.com.*

***Walter Bohmayr** is a senior partner and managing director in the firm's Vienna office, a core member of the Technology Advantage and Financial Institutions practices, and the leader of BCG's efforts in risk and finance IT and in cybersecurity worldwide. You may contact him by email at bohmayr.walter@bcg.com.*

***Claus Helbing** is a managing director of Platinion and a core member of BCG's Technology Advantage and Financial Institutions practices with a strong focus on IT transformations and IT architectures. He is based in the firm's Munich office. You may contact him by email at [helbing.claus@platinion.com](mailto:claus@platinion.com).*

THE END OF TWO-SPEED IT

by Hanno Ketterer, Benjamin Rehberg, Christian N. Schmid, and Djon Kleine

BACK IN 2012, AS established companies began to make a serious push into digital, BCG advocated a concept known as “two speed IT.” It was something of a compromise—a very necessary one. If IT organizations were going to support digital initiatives, they needed to work in faster, more flexible, more collaborative ways. Yet management often viewed these methods—based on principles set out in 2001 in the Agile Manifesto—as untested and maybe even a bit wonky. Two-speed IT was a way of saying, Don’t worry: you can use the new techniques for new areas like digital, and the traditional approach for mission-critical core functions.

Two-speed IT was a good idea at the time, but times have changed.

It was a good idea at the time, but times have changed. Today, two-speed IT is a compromise that companies can no longer afford to make. The future of IT is one speed: all-agile. That’s not just because agile has proved itself at countless startups and major technology companies—and for all types of software development, digital and nondigital alike. It’s not just because agile’s footprint is expanding to industries like banking and insurance. (See

“Ensuring Digital Readiness in Financial Services,” BCG article, April 2016.) And it’s not just because today’s companies can draw on fleshed-out playbooks when implementing agile. (See “Five Secrets to Scaling Up Agile,” BCG article, February 2016.) More than anything, it’s because two-speed IT creates—or will create—significant challenges for companies that continue to employ it.

Two-speed IT was a great intermediate stage, but it is not a long-term solution. And its term is up.

The Problems with Two-Speed IT

With its iterative development cycles, multidisciplinary teams, and continuous testing, agile represents a sea change from the traditional “waterfall” approach, where development flows sequentially from conception to testing and where separate teams take over at each phase. The differences between the models—and the processes, culture, and even mindset they require—make the appeal of two-speed IT easy to understand. But operating at two speeds, we have observed, creates three problems.

It’s harder to attract and retain talent. Recruiting and developing top-tier talent are perhaps the most important challenges that CIOs face today. You can’t do great things without great people. But two-speed IT puts

companies at a significant disadvantage in the war for talent. The organization is effectively split into two parts—each with its distinct, and inevitable, culture. There is the “fast” group, which is seen as doing all the exciting, cutting-edge work. And there is the “slow” group, which is viewed as doing the staid and traditional work. The dinosaur projects. The dull stuff.

It’s not hard to guess which group everyone wants to join. This causes a problem because having top talent in the slower group is particularly important. Here is where the hard challenges of transforming legacy systems are tackled—and where the larger part of IT spending still goes. But when people see themselves as stuck in the slow group with no chance to switch sides, they’ll look for opportunities elsewhere.

The ability to develop core systems faster and more flexibly is crucial.

Two-speed IT, we are seeing, leads to talent drain. It also makes it harder to hire talent. Today’s digital generation looks for—and expects—a workplace that emphasizes the flexibility, cooperation, and adaptability that are hallmarks of agile.

It leads to “hurry up and wait.” In today’s IT environment, fast-moving agile initiatives increasingly rely on core and legacy systems. Consider, for example, a digital front end that links to a back-end platform. In such a case, two-speed IT means slamming on the brakes. Fast-moving projects will often run up against—and be delayed by—slow traditional test-and-release cycles. What could have been running tomorrow is now set to run after the summer—maybe. This “slowest common denominator” issue is becoming increasingly problematic as digital applications become more central to business and must interact closely with core systems.

It keeps the larger organization from realizing the benefits of agile. Within many two-

speed companies, there is a well-entrenched notion that, changed world or not, the more methodical waterfall approach is still better suited for legacy and very large projects. But it’s not. Large projects are particularly susceptible to delays and rising costs, and tend to have very low success rates. Part of the problem is that testing comes only at the end of the process, so errors are found late in the game, when fixes become time-consuming, difficult, and expensive. Agile, with its iterative cycles and continuous testing, finds and corrects errors as development progresses. There is no last-minute—and nightmarish—back-to-the-drawing-board scenario.

The waterfall approach works well when the goal is fixed—if you know, for instance, that you need to build a bridge across a river. But in today’s IT realm, fixed goals are the exception. Whether it is a digital front end or a core business system, requirements change frequently because of customer feedback, competitors’ moves, evolving regulatory environments, and alterations made to associated systems.

Agile-related processes incorporate change better than waterfall methods do because they were *designed* to incorporate change. This adaptability is something the entire IT organization—not just part of it—needs to benefit from.

In a world where customers have more choices than ever before, the ability to develop core systems faster and more flexibly is crucial. To quote Peter Jacobs, the CIO of ING Bank Netherlands: “I would rather work agile at my core bank system than at the channels.”

Making All-Agile Work

While a single speed can “spread the wealth” of agile throughout the IT organization—and beat back the challenges that two speeds create—the model won’t work without the support and commitment of senior leaders. They can mobilize the troops and help steer—and, when necessary, push—the initiatives and changes that will ease the move to all-agile. A number of steps, we’ve found, are particularly crucial.

Identify and empower agile champions. Two-speed IT has helped companies get agile up and running in part of their organization. The experience and talent already developed can be harnessed to spread agile concepts—and knowledge—throughout IT. The most enthusiastic and communicative agile team members can serve as mentors to those just getting started—providing insights on what works, what doesn't work, and how to do things better.

Create the right technical environment.

Legacy systems are not a deal breaker for agile. Indeed, agile's main principles can be translated to work on any project, and industries that still rely heavily on legacy applications and infrastructure—such as banking, insurance, and aerospace—have already started to embrace, and benefit from, agile.

But there are modern technologies and practices that can make the agile approach more effective. A decoupled architecture—in which applications, infrastructure, and data interact with one another through standardized interfaces like APIs and microservices—allows teams to work more independently of one another. Now they're in control of their own development speed (and if one service breaks, just that service is down—not the whole system). Companies can also increase speed and efficiency—often dramatically—by combining agile with techniques like continuous delivery and continuous deployment of applications. This reduces the manual tasks—and the resources—required. Companies should be taking these steps anyway to improve their responsiveness and accelerate their digital transformation.

Implement agile in an agile way. A large established company is likely to implement agile very differently than a startup will. After all, bigger, older organizations must account for the layers of processes and hierarchy developed over the years. Similarly, agile will take different forms even within a single organization. Whereas one team may find two-week sprints optimal, another may determine that four or six weeks work better. Agile on a legacy mainframe, meanwhile, won't look the same as agile on a mobile shopping app. And because some projects,

like a major enterprise-resource-planning transformation, won't lend themselves to going live in little pieces, agile may mean releasing code to the testing environment—but not the production environment—every day. Agile is a flexible set of principles, not a rigid doctrine. It should be implemented in that spirit.

Offer incentives to middle management.

Agile changes the role of middle managers. Eventually, many of the coordinating tasks that have historically fallen to them will disappear. In agile, managers are much closer to the content and the technologies. While they still have some traditional managerial responsibilities, like recruiting and evaluations, they now work in the teams themselves. And on these teams, they are equal to every other member—serving, for example, as a fellow developer. Instead of instructing others, they work as coaches and advisors.

Agile will take different forms even within a single organization.

Given these shifts, it's easy to understand why middle managers would resist the migration to agile: they can see themselves losing control and power. How to avoid this perception? One way is to start getting these managers closer to the front—in both body and mindset—through education, training, and participation in agile conferences and the agile community. KPIs used in measuring a manager's performance should be tweaked as well. They should encourage the quick development and deployment of features but also tolerate some failures as long as the overall system stays stable. This is much more in line with how agile works.

Develop a digital culture. Migrations from two-speed to all-agile IT won't happen overnight. And with the war for talent continuing, it's important to send a message—to current and prospective employees—that agile and the workplace it creates are the company's future. Hackathons—marathon

sessions where teams compete to develop software and even hardware—have been used to foster a fast-moving “think outside the box” culture. (In fact, Facebook’s ubiquitous “like” button traces back to a company hackathon.) The idea is to take steps that let technology experts know that they can stay—and succeed—as technology experts; that, contrary to the old days and the old ways, they don’t need to take a managerial position to make a career at the company.

Establish joint business and IT teams. One of the hallmarks of agile is the cross-functional team, in which members representing the business and IT work together. Migrating to agile means breaking down organizational barriers and fostering communication and collaboration across once-isolated domains. (See *The Power of People in Digital Banking Transformation*, BCG Focus, November 2015.) Flexibility is crucial here, too. A key tenet of agile is that someone from the business side serve as the “product owner.” But for IT4IT products and tools, such as telepresence, it will make more sense for this owner to come from IT. Once again, the experience and practices already developed on the agile side of two-speed IT can prove invaluable.

Taking Agile Even Further

Unlike two-speed IT, the all-agile model is a long-term solution—and not only for the IT organization. Think about the main principles of agile: short iterations that enable teams to quickly spot errors and react to changes; collaboration in multidisciplinary teams; and progress that remains visible—and tested—as work continues. These are principles that can be utilized to great effect throughout a company, increasing its responsiveness to customers and competitors alike.

Already, we are seeing agile move beyond IT into areas such as product management and marketing, and functions that include human resources and risk management. (See *The Agile Marketing Organization*, BCG Focus, October 2015.) Spotify and ING are notable examples of companies that are bringing an agile style of working to IT and the business alike. (See “Building a Cutting-Edge Banking IT Function: An Interview with Ron van Keme-

nade, the CIO of ING Bank,” BCG article, December 2015.)

Today’s businesses are under mounting pressure to get products to market and systems deployed while minimizing risk and delay. Two-speed IT was an important step in gaining experience in new and better ways to do this. Now it’s time to take the next step. A return to a single speed—one based on agile principles—will improve efficiency and outcomes across all technology delivery and, ultimately, across the company. The result: better experiences for customers—and a competitive edge for the business.

***Hanno Ketterer** is a senior partner and managing director in the Amsterdam office of Boston Consulting Group and the global leader of the insurance sector in the firm’s Technology Advantage practice. For more than 20 years, he has led large-scale technology transformations and post-merger integrations in the banking and insurance industries. You may contact him by email at ketterer.hanno@bcg.com.*

***Benjamin Rehberg** is a partner and managing director in the firm’s New York office and the global coleader of agile at scale for the firm’s Technology Advantage practice. You may contact him by email at rehberg.benjamin@bcg.com.*

***Christian N. Schmid** is a principal in BCG’s Munich office. He is active in the firm’s Technology Advantage practice and is the global operational leader of the Simplify IT topic in the Financial Institutions practice. For the past ten years, he has driven large-scale transformations—including digital and agile transformations, simplification and restructuring programs, and post-merger integrations—for numerous companies. You may contact him by email at schmid.christian2@bcg.com.*

***Djon Kleine** is a project leader in the firm’s San Francisco office. A member of BCG’s Technology Advantage practice, he has experience in technology-related transformations involving digital, agile, software-development, and cloud-computing topics. You may contact him by email at [kleine.djon@bcg.com](mailto:djon@bcg.com).*

FIVE SECRETS TO SCALING UP AGILE

by Kaj Burchardi, Peter Hildebrandt, Erik Lenhard, Jérôme Moreau, and Benjamin Rehberg

COMPANIES ACROSS MANY INDUSTRIES are struggling with the transition to agile, a fast, iterative software development method. Too many companies have the appearance of agile—with, for example, hastily converted, brightly colored meeting rooms and daily standup meetings—but they achieve little of tangible impact.

At software startups in which agile is commonly used, the development team is at the heart of the business, so buy-in, sustained commitment, and collaboration come fairly naturally. It is not easy, however, to integrate self-directed, cross-functional agile teams into the existing hierarchy of large companies.

Some large companies, however, are figuring out how to make agile work. Rather than impose its specific methodologies, they apply its general principles, paying special attention to the integration of agile teams into the rest of the organization.

When large companies get agile right, the results can be stunning. Productivity can improve by a factor of three. Employee engagement, measured in quantitative surveys, increases dramatically too. New product features can be released within weeks or months rather than quarters or years. Rates of innovation rise, while the number of defects and do-overs declines. In the first year after going agile, one bank's development team in-

creased the value delivered per dollar spent by 50%, simultaneously cutting development time in half and improving employee engagement by one-third.

As the quality of software rises and the responsiveness of processes improves, some companies are applying agile principles to activities other than software development. For such companies, agile can become a journey of continuous improvement.

Why Agile?

Agile grew out of a desire to improve traditional methods of software development. Customarily, software has been developed sequentially, with the waterfall serving as a rough metaphor for its progression. Separate groups conceive, design, build, test, put into operation, and maintain software, each group waiting for the preceding group to complete its work. The method is inefficient. In many cases, participants spend more time sitting in meetings and managing handoffs across organizational boundaries than writing and testing code. According to the often-cited *The Chaos Report*, less than 10% of large software projects come in on time and on budget.¹

The waterfall method comes from engineering, but writing many types of software is different from building a bridge. A river doesn't change its course, but software

users have frequently changing and unpredictable needs. Consequently, agile relies on bringing together many different points of view and supporting back-and-forth dialogue between developers and business executives.

Many forms of agile have been developed, but at its heart, agile is a set of beliefs. It is *iterative, empirical, cross-functional, focused, and continually improving*:

- **Iterative.** Agile is based on doing things repeatedly until you get them right. Short iterations mean that teams can change direction and react quickly. Progress remains visible and predictable because development happens in short sprints. Delivery risk declines progressively.
- **Empirical.** Agile teams rely less on the plans, estimates, and assumptions common to waterfall methods and more on A/B testing and other real-time metrics generated by end users. One of the many virtues of sprints is that they produce empirical feedback quickly, allowing teams to self-correct. Agile teams also measure and track their activities closely.
- **Cross-functional.** Agile teams have members of such relevant functions as business, marketing, development, and, in some industries, risk management working closely together in order to facilitate early and frequent feedback from business executives and customers. All the members of the team have specific roles and responsibilities.
- **Focused.** Agile teams are fully accountable. They do not work on several projects simultaneously; nor do they leave a project once their specific duty is done. In for the duration, they develop a sense of accountability.
- **Continually Improving.** Agile software is a work in progress, with constant updates and experimentation aimed at satisfying customers.

Putting the agile set of beliefs into practice

can be difficult in large companies, given layers of processes and structures, such as HR, finance, and legal functions. Rather than viewing agile as yet another new process, companies should integrate agile values into their own software-development organization and culture, making reasonable modifications when necessary. (See the sidebar, “The Secret Sauce: Making Agile Work.”)

There are five secrets of success for large-scale agile transformations.

It Starts at the Top

Transformative change requires support from the top. Senior leaders need to be actively involved in fundamental decisions about the business purpose of going agile and the cultural barriers and root causes that might stand in the way of success. Without this commitment, legacy approaches to, for example, capital allocation, HR processes, and portfolio management will doom agile. That’s why business—not just tech—leaders must be accountable.

Business—not just tech—
leaders must be accountable.

Agile transformations are different from other transformations: leaders must mobilize management to march in an unfamiliar new direction. The fast pace and cross-functionality of agile can put many executives out of their comfort zone. Without strong and steady support from the top, many executives and team members revert to the norm. The CEO of a large European bank told us that he wants his organization to operate as a technology company that deals with financial services products.

To Fly, You Need Pilots

In a large organization, agile pilots are necessary in order to determine whether agile will work there and whether the organization will accept agile principles. Pilots are critical to a company’s making the necessary adaptations to agile.

THE SECRET SAUCE

Making Agile Work

There are several best practices that help activate the agile set of beliefs at large companies. These practices—which embrace iterative, empirical, cross-functional, focused, and continually improving approaches—accommodate the realities of large organizations while staying true to agile principles.

- **Iterative.** Agile teams complete manageable chunks of work—and produce a prototype—within fixed time periods. On the basis of feedback on the prototype, the team moves forward to a new set of tasks. The technical environments of large companies may not easily permit teams to operate in the two-week sprints customarily used in agile, so many of them have stretched the sprints to intervals of four to six weeks.
- **Empirical.** Testing, a cornerstone of the agile approach, ensures that software quality remains high and development activities are run efficiently. Large companies, especially those new to agile, may not have invested heavily in testing tools. But as long as they are simultaneously building the business case for making these investments, companies can forgo some of the rigorous testing conducted by true agile organizations.
- **Cross-Functional.** Ideally, teams should not violate the “pizza box rule,” which restricts team membership to the

number of people who can eat a single pie. The idea is to limit membership to those individuals who possess essential and complementary skills so that the team can accomplish real work. However, this rule can limit the ability of large companies to have the right experts on a team. The rule may, therefore, be loosened as long as all members are fully on board—part-timers need not apply—and contributing, not delegating.

- **Focused.** The single most important element of a functional agile team is the “product owner,” a single executive who is empowered to make decisions about scope, timing, allocation of budget, and product features. In a pure form of agile, the owner does need to consult a steering group or governance body. In large companies, however, this focus may be shared by two or three executives, such as a product manager and a business analyst or expert and possibly a “product executive.”
- **Continually Improving.** Agile teams rely on retrospectives, obstacle removal processes, and scrum masters to continually identify opportunities to enhance productivity by tweaking and tuning their environment and way of working. The specific methodologies are less important than the commitment to view the creation of software as an ongoing—not fixed—and organic process.

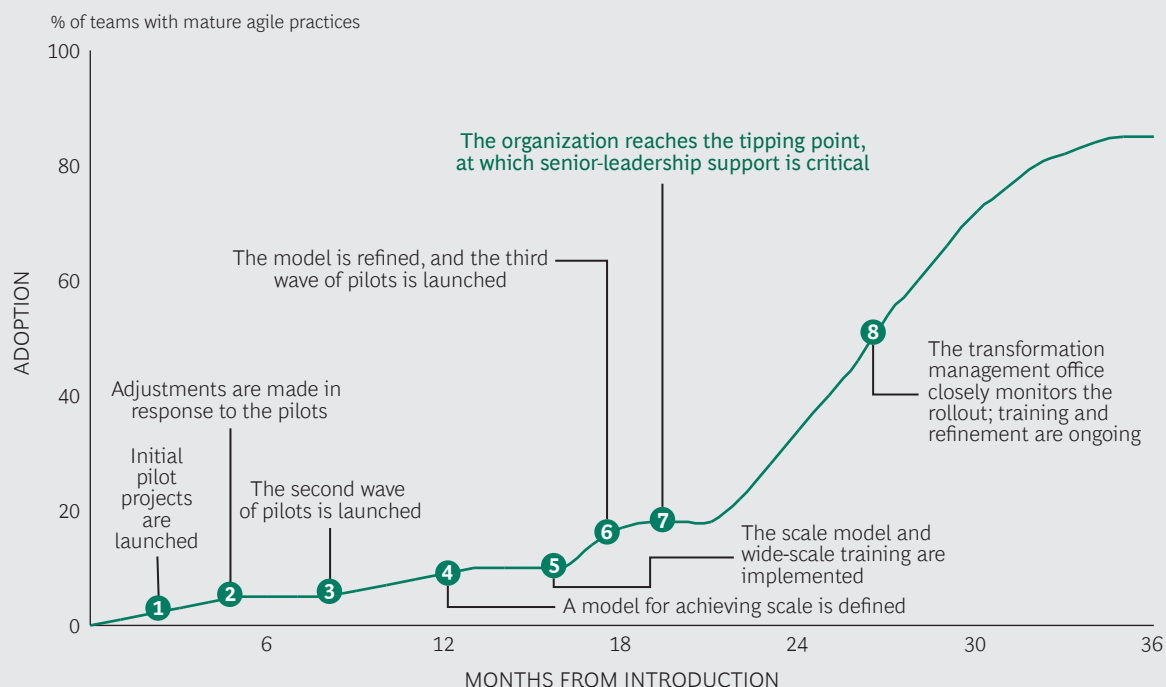
For example, in a scrum, a single product owner takes responsibility for managing the relationship and interactions between developers and customers. This role requires a careful mix of technical and business skills.

Companies may need to have even two or three people collectively serving in that role until the organization develops people who have the required multifunctional skills.

Likewise, it might be difficult to fully implement iterative development in all instances, but frequent feedback between developers and business executives ought to be the norm.

Staged rollouts in waves create momentum by building relevant capabilities and ensure that agile principles and culture are embedded across the organization. (See Exhibit 1.)

EXHIBIT 1 | Agile Transformations Take Time



Sources: BCG case experience and analysis.

Managing the Tipping Point

The pilot phase is followed by steps that must be executed with some delicacy to avoid unnecessary tension: it's time to scale up agile in an organization that may be theoretically willing to accept it but, practically, is challenged to do so.

There are several successful approaches for scaling up agile within organizations.

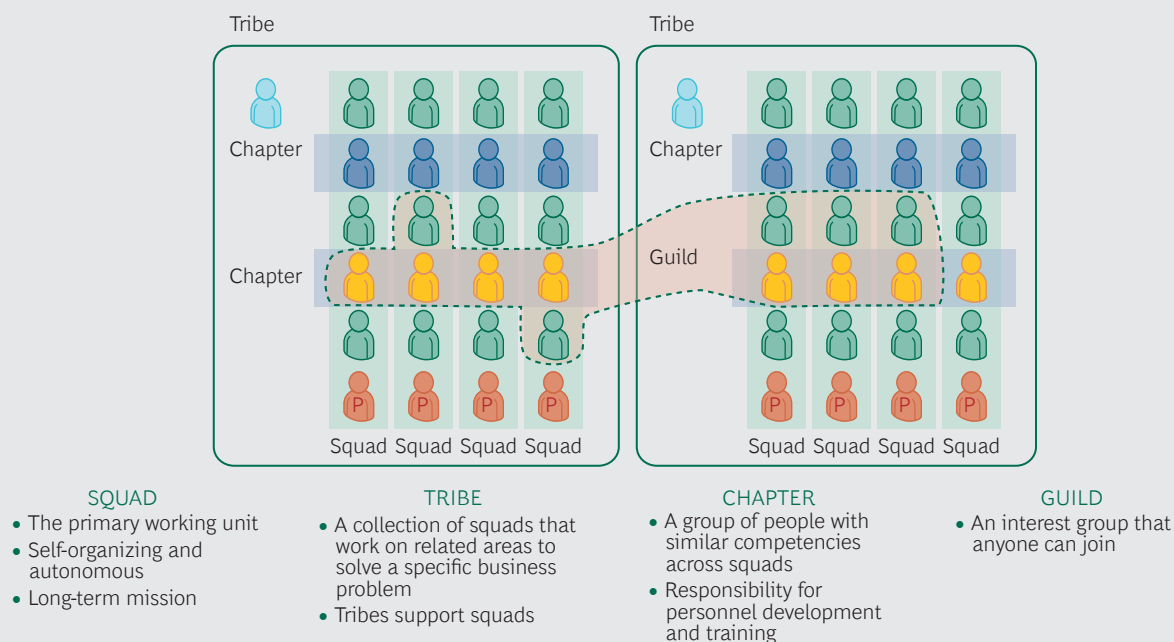
HR processes, such as performance management, may not be set up to handle fully dedicated cross-functional teams where team—not individual—results matter most. Agile's flexibility will almost certainly strain budgeting processes even if agile is ultimately less costly than traditional development activities. An organization's IT infrastructure may not be set up to accommodate continual integration and deployment because of lengthy provisioning times. Furthermore, traditional development teams may be

resentful, and certain activities may be outsourced.

These are all real technology and organizational concerns that will not resolve themselves on their own. Executives must actively manage the integration, and the enterprise almost certainly will have to invest in training and development to encourage the right culture and behaviors.

Several successful approaches exist for scaling up agile within organizations. At one extreme, the music-streaming service Spotify has fundamentally changed its organization structure. The company's product delivery organization is made up of squads, tribes, chapters, and guilds. The primary unit is the squad, a multidisciplinary team that works toward a shared purpose and is run by a product owner. Tribes are groups of squads that work on related areas. Chapters are groups of people with similar expertise across squads, and they form the line organization. Guilds are interest groups that anyone can join. (See Exhibit 2.) Other companies have simply overlaid cross-functional teams above existing hierarchy.

EXHIBIT 2 | Organizing the Spotify Way



Source: Spotify.

Measure, but Measure the Right Things

The ultimate goal of agile is to improve the business. Therefore, the ultimate measurement should relate to business performance. If the goal of a bank's agile project is to reduce the dropout rate in credit card applications, then the dropout rate should be the most important metric. But in order to improve the business, companies also need to track software reliability, security, complexity, and size.

That's where software measurement tools enter the picture. These tools allow companies to demonstrate empirically the productivity and quality improvement of agile development and the overall performance of agile teams.

Never Stop

Agile development is an exercise in continuous improvement. It is not a one-off exercise. Agile requires constant monitoring to ensure proper functioning. Companies need to take steps to bake the agile principles into the organization. There are many ways to ensure that agile endures. Many companies, for ex-

ample, create teams consisting of the leaders of each agile project, and they share best practices.

AT its heart, agile is about creating the right context in which your people—specifically your developers—can do their best work. It is often thought of as a method for writing software, but ultimately, it is a way to run and continually improve your business.

NOTE

1. The Standish Group International, *The Chaos Report*, 1995, <http://www.csus.edu/indiv/v/velianitis/161/ChaosReport.pdf>.

Kaj Burchardi is a managing director in the New York office of Platinion, a subsidiary of Boston Consulting Group that provides IT consulting services. He specializes in the development of strategic IT concepts and solutions, IT architecture, and digital transformation, especially in the financial services industry. You may contact him by email at burchardi.kaj@bcgplatinion.com.

Peter Hildebrandt is a partner and managing director in the firm's Los Angeles office who specializes in technology and operational issues in the financial services industry. You may contact him by email at hildebrandt.peter@bcg.com.

Benjamin Rehberg is a partner and managing director in BCG's New York office and the global coleader of agile at scale for the firm's Technology Advantage practice. You may contact him by email at rehberg.benjamin@bcg.com.

Erik Lenhard is a principal in BCG's Munich office and a core member of the Technology, Media & Telecommunications practice and Technology Advantage practice. He is a topic expert in digital transformation, strategy information management, big data, and agile software development. You may contact him by email at erik@bcg.com.

Jérôme Moreau is an associate director in the firm's London office and a core member of the Technology Advantage practice who specializes in digitization, technology transformation, and agile development. Before joining BCG, he worked for eight years in the automotive sector as the leader of an agile task force. You may contact him by email at moreau.jerome@bcg.com.

TAKING AGILE TRANSFORMATIONS BEYOND THE TIPPING POINT

by Neil Pardasani, Martin Danoesastro, Koen Alfrink, Liza Stutts, Tom Schotkamp, and Pim Hilbers

AGILE HAS PROVED ITS value in industries far afield from software, where it was born. But when companies expand agile beyond the pilot phase, they often run into challenges as friction develops between traditional and agile teams.

At this tipping point, senior leaders face a crucial choice. Do they limit the use of agile and its benefits—including speed, customer focus, and employee engagement—or do they unlock far greater value by changing the operating model so that agile becomes the norm rather than the exception? Committing to a new operating model requires a transformational approach, led from the top.

The Benefits of Agile

When a customer or a business challenge requires input from different parts of a company, it's logical to bring together and empower people from those disparate areas to find a solution. Software developers embraced this idea by creating multidisciplinary teams whose daily and weekly operating rhythms generated minimum viable products that could be tweaked and improved in response to customer feedback. This way of working increases customer focus, output orientation, and team empowerment. Software that emerged from this process met customer needs far better than software that was developed through conventional methodologies.

What's good for tech firms and startups, it turns out, is also good for more traditional companies. Fighting off fintech startups, banks were perhaps the first organizations outside of pure technology companies to embrace agile. But agile has now expanded into a wide variety of digital-enabled industries, and agile principles are being adopted far beyond software development. (See “Taking Agile Way Beyond Software,” BCG article, July 2017.)

To date, most companies limit agile to what we call the delivery organization—typical headquarters functions such as marketing, product management, digital channels, and IT. As agile spreads, it looks and feels different, depending on the underlying nature of the work. What agile means for the delivery organization, for example, is different from what it means for contact centers and operations. But the overall mindset and principles should remain consistent.

As many organizations have found, the payoff is worth the effort. Companies that have adopted agile at scale have increased customer satisfaction by delivering better products faster while simultaneously improving efficiency and employee engagement.

Managing the Transition

Companies cannot proceed with agile pilots forever. Eventually, they have to decide

whether to take the next step and achieve scale with this new way of working.

The rest of the organization can become resentful when agile teams make decisions and progress more swiftly and as they receive resources that might otherwise be dedicated to more traditional business-as-usual initiatives. Similarly, when the number of agile teams grows, they become more difficult to manage as an exception. The embedded bureaucracy often takes hold again, and agile’s benefits start to slow and ultimately disappear. Unsurprisingly, the morale of the agile teams sags with the return of hierarchies and slow decision making. Managing both agile and traditional tracks is challenging. Companies can either quarantine agile in relatively isolated parts of the business or fully embrace agile at scale.

Agile is a fundamentally different way of working that requires a change in culture, values, and behaviors. Achieving these changes at scale requires alterations to the context in which people work. And the only effective approach to changing the context at scale is to transform the organization’s operating model. (See Exhibit 1.) Organizations need to change underlying structures and roles, systems, governance and funding mechanisms, and career paths in order for agile to take

hold. They also should seek to ensure that agile teams work in the same location—a challenge for companies with teams scattered far and wide. These changes require the full commitment of the CEO and other senior leaders.

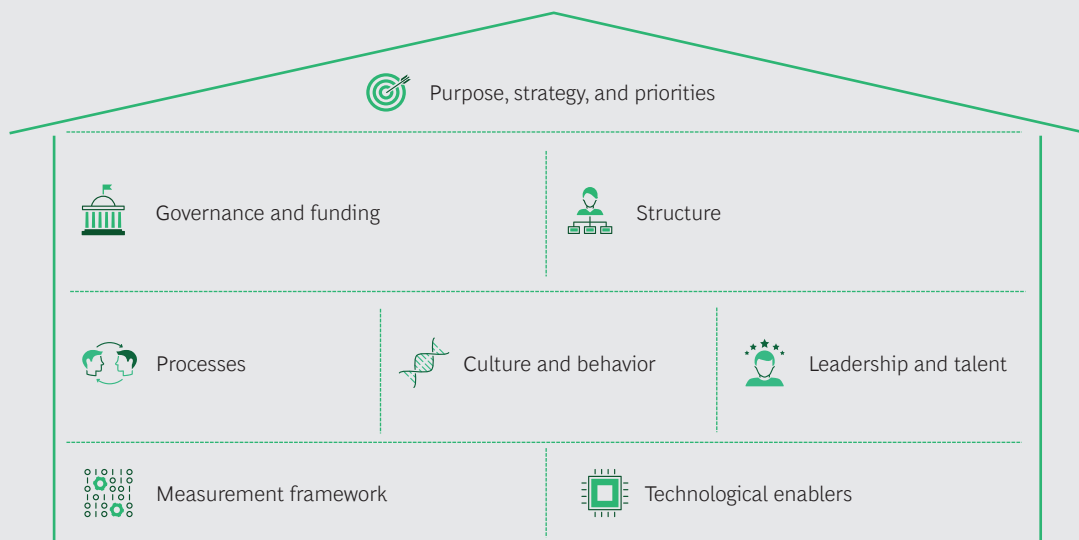
A top-down transformational approach may seem counterintuitive. After all, the goal of agile is to empower rather than control teams. But structurally changing the operating model can succeed only when the top team leads. This can be a scary transition, especially for leaders, but it allows companies to fully capture the value of agile across their organization.

A New Role for Leaders

Leadership looks different in an agile organization. One key role of agile leaders is to ensure alignment around purpose, strategy, and priorities. Leaders need to communicate what they want and why, and then empower their teams to figure out how to achieve it. The greater the alignment that leaders create, the more autonomy they can grant.

In the C-suite and right below it, leaders can sometimes be siloed, internally oriented, risk averse, and motivated by their own performance metrics rather than those of their team. They have risen to the top ranks by op-

EXHIBIT 1 | The Eight Elements of an Agile Operating Model



Source: BCG analysis.

erating in ways often counter to agile. Accustomed to overseeing budgets and business cases, these executives instead need to set clear objectives and guardrails and then give agile teams the responsibility and resources to achieve those goals. In providing visible support for agile teams, they must demonstrate openness, trust, and collaboration.

Not all leaders can make this transition. For example, one Asia-Pacific company undergoing an agile transformation replaced one-quarter of its top 40 leaders with individuals who better embodied agile values, such as collaboration and teamwork.

Middle managers will also face challenges. Those who have grown up inside silos will need to learn how to manage cross-functional teams and delegate decision making to employees closer to the field. They may even need to return to doing the daily work rather than only managing other people. The coordination activities that consumed so much of managers' time are increasingly handled within and between teams.

What's Different About Agile Transformations

While agile may be a fundamentally different way of working, many of the steps to become

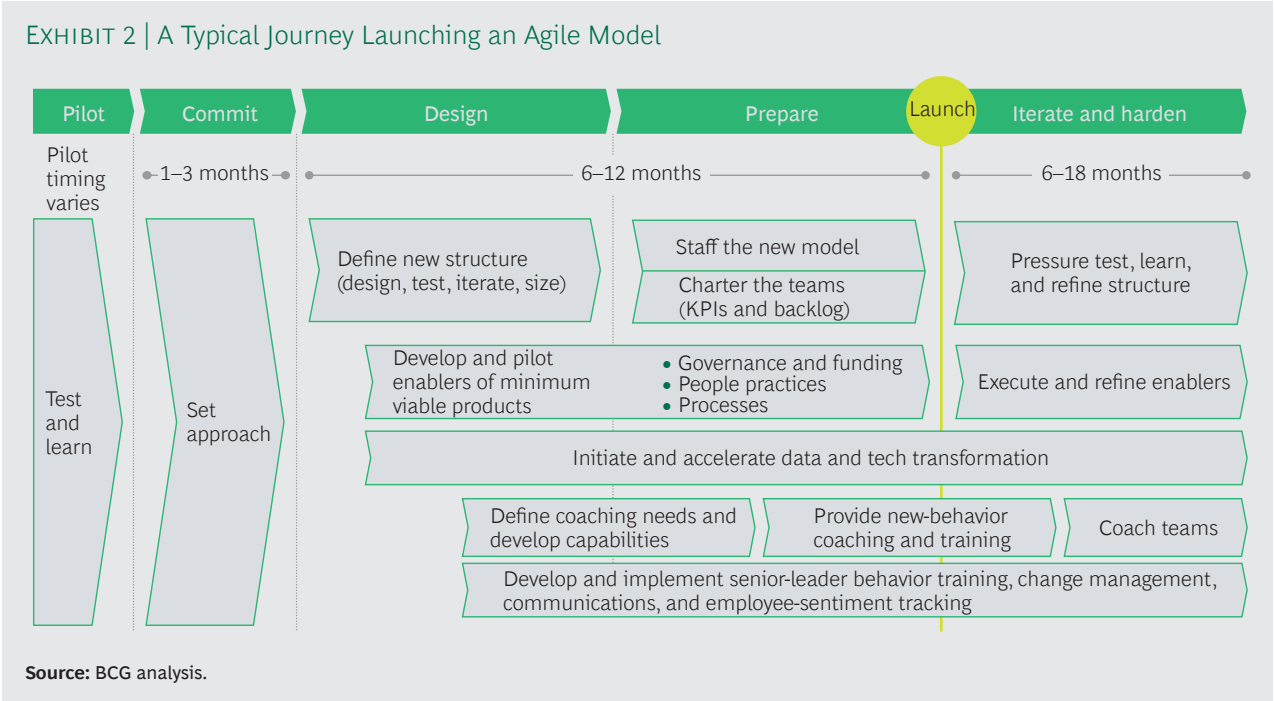
an agile organization are familiar to any executive who has gone through a successful corporate transformation. (See Exhibit 2.) The steps of committing, designing, preparing, and refining are variations of any large-scale change.

What's different is that the transformation itself needs to be conducted using agile methods. One premise of agile is that learning through trial and error is the best way to discover answers to essential questions. The transformation should rely on a minimally viable approach to analysis, skills, and technology. Iteration is core to agile. Once an organization takes the first steps toward an agile transformation, the process unfolds through continual refinement and adjustment. A willingness to adapt is the *raison d'être* of a successful agile transformation and of the agile-leadership mindset.

Are You Ready?

We are bullish on agile because we've seen it create greater employee engagement, higher product quality, faster product delivery time, and stronger financial performance.

At the same time, top-down agile transformations are challenging. Leaders need to reflect on whether they're willing to commit fully to



new ways of working and leading and whether their organization can withstand the tumult of such a transformation.

In a digital world, we think the choice is clear. Agile provides two crucial strengths: the alignment to ensure that resource allocation and strategy are in sync, and the autonomy to promote the agility needed in a fast-moving economy. You should start with a series of pilots. But it takes a full-scale transformation to reap all the riches and rewards of agile.

Neil Pardasani is a senior partner and managing director in the Los Angeles office of Boston Consulting Group. He is also the global node for agile at scale in the Financial Institutions practice. You may contact him by email at [pardasani.neil@bcg.com](mailto:neil@bcg.com).

Martin Danoesastro is a senior partner and managing director in the firm's Amsterdam office and the global coleader of agile at scale for the People & Organization practice. You may contact him by email at danoesastro.martin@bcg.com.

Koen Alfrink is a principal in BCG's Melbourne office. He is a core member of the Financial Institutions and People & Organization practices and specializes in agile at scale. You may contact him by email at alfrink.koen@bcg.com.

Liza Stutts is a principal in the firm's Boston office and a core member of the People & Organization practice. She focuses on topics including agile at scale, leadership, and talent. You may contact her by email at stutts.liza@bcg.com.

Tom Schotkamp was a principal at BCG.

Pim Hilbers is a principal in the firm's Amsterdam office and a core member of the Financial Institutions practice who specializes in agile at scale. You may contact him by email at [hilbers.pim@bcg.com](mailto:pim@bcg.com).

VIEWS FROM THE FIELD

by Paul McNamara

THE AGILE PRACTITIONERS AT BCG share their insights in many forums. Following are a selection of relevant blog postings.

LINKEDIN BLOG

Can Agile Work for Business-as-Usual Teams?

One of the common misconceptions about agile is that it can be used only for project work, not business-as-usual work. Business-as-usual work refers to the routine, day-to-day operations that keep the business functioning smoothly (as opposed to innovative projects aimed at changing the business).

Agile is used on a project basis for obvious reasons. With agile, project teams are more productive, products get to market quicker, and companies can be more responsive to customers' needs. As agile spreads throughout the entire organization, however, teams that engage in business-as-usual operations can also use it.

So, if you're not working on an agile project but want to get the benefits of agile in the workplace, here are a few tips.

Plan for the expected—and the unexpected. In our daily work, we all have to balance competing priorities. We have regular work

that must get done every week, month, quarter, or year, but we are also surprised by unexpected, urgent work that must be addressed immediately. Distractions are inevitable. There's never enough time to get everything done.

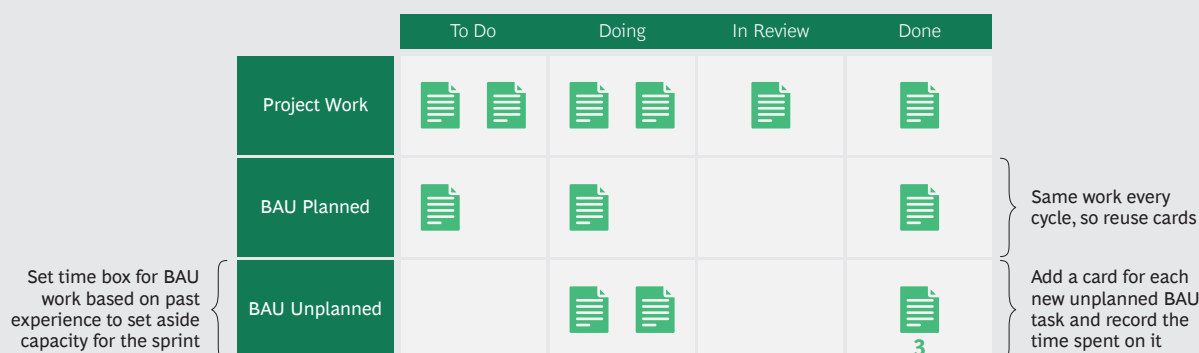
Business-as-usual teams can use agile techniques to prepare for planned work. Planned work includes activities like weekly reporting, recurring meetings, performance reviews, executive-meeting preparation, and so on.

To create more agility when it comes to routine work, teams can create laminated cards that define planned tasks. The cards can be posted on an agile wall that teams use to track work, taken down when the task is complete, and then reused when the task rolls around again. With this approach, you can be sure that routine activities are under control and that the backlog never gets overwhelming.

The real challenge comes when coping with unplanned tasks. Your boss needs a presentation for an upcoming meeting. You need to respond to an urgent regulatory request. You get pulled into a high-priority project. You can't plan for these things—and they often have urgent deadlines.

In these situations, use agile to manage time appropriately. Start by establishing a simple rule: nothing gets done unless it's on a card

Example of a Sprint Board



Source: BCG.

Note: BAU=business as usual.

that will be posted on your agile wall. (See the exhibit.)

Also, take 15 seconds at each standup meeting (a standup meeting is a feature of agile) to jot down on a card what you did and how long it took. Afterwards, the agile coach can tally up how much time was spent on these unplanned tasks. Be sure to track (in the moment, not weeks or months later) how long tasks take so that you can truly understand the cost of unplanned tasks. Surprisingly, the amount of time spent on unplanned tasks is quite consistent from month to month, which means that teams can budget time for them.

Prioritize relentlessly. Create a single board that allows teams and other stakeholders to visualize the status of planned work, unplanned work, and project work. When someone makes an urgent, unplanned request, teams can consult the board and respond this way: "Of course we can do that. Can you help me understand if it's a higher priority than the planned work and project work on the board?"

Marketing teams often find this approach particularly useful. One creative director who used this technique said, "This is amazing. Now that I can show my boss the impact of distractions, it's no longer a fight. It stops the back-and-forth."

If you want to incorporate agile into your business-as-usual operations, start by understanding how you spend your time on a daily,

weekly, and monthly basis. Once you can visualize when and how your routine work is being disrupted, you can plan for these disruptions—and prioritize more effectively. You can also pinpoint the areas where time is being squandered.

So, whether you're engaged in project work or business-as-usual work, there's much to be gained from agile ways of working.

LINKEDIN BLOG

How Leaders Can Signal that an Agile Transformation Differs from Anything That's Come Before

For an agile transformation to work, people need to believe in it. It needs to look and feel different, and that requires major changes, from the top down. Top executives need to make clear not only that they expect their management teams to change but that they themselves are willing to change.

To send a strong signal that this transformation is different from anything that has come before, companies need to make meaningful changes in the executive ranks, break down strongly held cultural barriers, build a sense of camaraderie, and create opportunities for people to experiment with new ways of working. This requires change at all levels of the organization, especially at the top.

So, senior executives need to ask themselves: "What am I willing to give up?"

Here are a few examples.

Give up your corner office. Being given a corner office has long been a measure of success for any manager. It reinforces the company hierarchy and confers instant status.

But to succeed in an agile world, leaders need to empower teams—and that often means getting down in the trenches to work alongside them. An Australian bank deliberately embraced an open floor plan such that the CEO sits at a desk in the open and uses an office only for confidential meetings. It's quite striking for employees to walk past the CEO every day on the way to their desks.

Remove executive-only access. Reserving special privileges for executives only serves to reinforce hierarchy. If certain executives get more, it suggests that their contribution to the organization is more important.

How to reverse this? A Dutch bank unlocked its executive-only elevator, allowing all employees to access the floor where the executives worked. At another company, the CEO removed the special parking spaces for executives, opened up the executive floor, and established a kanban wall outside his office to display companywide improvement initiatives for all to view.

Reverse recruiting. Managers tend to recruit new talent by placing a job ad, waiting for applicants, then choosing who will work “for” them. One organization recently launched a careers marketplace in which senior executives were asked to “pitch” potential employees about why they should join the team. By shifting the balance of power, employees felt a much greater sense of ownership regarding the company's overall mission and purpose.

Open communications. Transparency can be difficult for senior managers, particularly if they believe employees expect them to have all the answers. By holding secretive meetings behind locked doors and communicating only when decisions are final, companies breed a great deal of uncertainty.

An Australian bank created an open-door policy for its transformation team meetings,

posting the roadmap and plans in plain sight. It led tours of the team room for employees, who were encouraged to ask questions so that they could feel included as part of the change, rather than viewing it as something that was happening *to* them. The CEO even posted a video on Facebook of the transformation team's “base camp.”

Change up the leadership. One of the most telling signals a CEO can send is to make a change at the leadership table.

In an agile culture, leaders need to set a clear vision, build high-performing teams, remove obstacles, and inspire employees to do great work. Some companies have experimented with making all leaders re-apply for their jobs or bringing in new leaders from nontraditional backgrounds, to signal early on that an agile transformation is unique.

Walk the walk. When executives spontaneously ask their teams for status updates, it creates a lot of stress and frantic activity.

With agile, however, these types of updates (which are called showcases or sprint reviews) are built in. Executives can sit in on these showcases to get a clear, comprehensive, and unvarnished view of where projects stand at regular intervals.

At an airline, the CEO of a division participated actively in every showcase. At one point, she publicly celebrated a team's failure, saying: “This is amazing. It normally would have taken us six months to figure out that this was a mistake, but you found out in two weeks. Well done!”

And the CEO of a large bank regularly visits team rooms and attends showcases when the team members—not the managers—provide updates, gaining a more granular view of the team's progress.

Transform the workspace. To signal the importance of an agile transformation, things need to feel and look different. The changes don't need to be expensive—some Ikea furniture and cardboard pop-up walls will get the job done—but teams should be able to create their own spaces, convert old offices

into team rooms, and have access to large walls to post sprint boards, customer journeys, and other useful content.

These are just a few of the changes that can signal that an agile transformation is different. You will need to find yours. What are you willing to give up?

LINKEDIN BLOG

Is Agile Putting Managers Back to Work?

As organizations embrace agile, they are forced to reckon with a fundamental paradox that lies at the heart of today's business model. The most productive and talented employees (the doers) are often rewarded for their exceptional work by getting promoted—into management.

This is often a big mistake. When they promote the doers into managerial positions, companies lose their most talented producers and bloat their management ranks. Consider this. In traditional organizations, approximately 30% to 40% of overhead is dedicated to non-doers; that is, employees who don't deliver value directly for customers.

By organizing into agile teams, companies can get this share down to 10% to 15%. As part of your agile transformation, should you be putting managers back to work?

The answer is yes. And most of the people involved will thank you for it. By developing new career paths, creating a motivating environment, and restructuring the way teams work, companies can retain their best and brightest—and deliver more output than ever before.

Develop new career paths. When employees get promoted, it usually means they're moved into a management position where they lose the opportunity to use their specialized expertise. But this expertise is the very thing that set them apart from their peers. Promotions like this represent a huge loss for the employee—and the company. Instead, we need to create career paths that reward excellence without turning people into non-doers.

Some companies are developing career paths that allow strong performers to receive the same level of compensation for promotions within their function as they would receive with a promotion into management. This allows doers to do what they love and get paid well for it.

For example, an Australian construction management company recognized that it was losing all its best project managers to the head office, because a move to the head office came with a big pay raise. So, the company offered a new career path for project managers that allowed them to thrive—both professionally and financially—in the role they loved, a role that is also very valuable to the company.

Spotify and ING took another approach. They implemented the concept of chapters, which are teams of approximately seven employees with similar skill sets. The chapter lead divides his or her time equally between managing the chapter and delivering work to the agile squad. Being a chapter lead is a career path that allows experts to grow into “managers” and share their skills by building a team while still being able to actively hone their own functional skills.

We need to stop promoting our most valuable employees into stagnant management positions. Find ways to reward and promote them so they can focus on what they do best.

Establish a motivating environment. Daniel Pink, author of *Drive: The Surprising Truth About What Motivates Us*, highlights three elements that motivate people in the workforce: purpose, our yearning to be part of something larger than ourselves; mastery, our urge to make progress and get better at what we do; and autonomy, our desire to be self-directed.

Doers draw upon all three motivations on a daily basis. But for managers, it's not so easy. Many managers gradually lose touch with their sense of purpose, stop doing the things they love to do, and have less direct control over outcomes. The buzz that comes from a promotion to management is short-lived; managers soon realize that they can't contribute in the ways that allow them

to learn, create, and build something new.

But when managers are put back to work, they regain the opportunity to derive meaning and satisfaction from their work on a daily basis.

Support self-organizing teams. To maximize the number of doers versus non-doers, teams need to be able to manage themselves. It can take time to build these capabilities, and agile coaches play a key role in supporting autonomous teams. In the early stages, teams typically need a ratio of one coach for two to three squads. As the teams mature and become better at self-organizing, the ratio can shift to one coach for four to eight squads. A strong agile leader will simplify processes, remove roadblocks, track outcomes (rather than schedules and budgets), and establish clear metrics for success.

Companies can significantly improve productivity by ensuring that doers are properly rewarded and promoted. It requires some targeted changes within the organization: developing new career paths, creating a motivating work environment, and investing in self-organizing teams. But these changes are not particularly difficult to implement, and they can radically improve productivity, motivate the workforce, and help companies optimize talent.

Is Agile the End of Hot-Desking and Other Work Environment Experiments?

In recent years, new approaches to workplace productivity have taken off. Not all of these experiments are yielding positive results. Consider the need for fit-for-purpose work environments that push beyond the classic “corner office” setup. Some of these efforts tend to undermine agile ways of working.

One such effort, “activity-based working,” provides an example. With this approach, employees are encouraged to move around and occupy the office spaces that best support their daily activities, whether workstations, open spaces, or private rooms. In theory, this arrangement supports a flexible working style and encourages spontaneous connec-

tions with colleagues. In practice, the arrangement means established teams find it difficult to collaborate over time.

“Hot-desking,” or “hoteling,” is an even more radical experiment. In this arrangement, employees either share an assigned desk with colleagues during different time periods or are not assigned a desk at all and must find one when needed. Hot-desking can serve as a cost-savings measure in companies whose workforce travels a lot, as is the case with road warriors, consultants, and technicians.

But in more traditional companies, hot-desking can leave employees perched in make-shift work areas, without adequate access to private or quiet spaces. It can also lead to unpleasant competition for scarce resources.

In one company that experimented with activity-based working, team leaders began sending executive assistants to the office a half-hour early to “reserve” seats for their team. Naturally, other teams started to do the same thing, and it soon became a race to see who could get into the office first to reserve space.

Similarly, when a wealth management company moved to activity-based working, it, too, got into a situation where squads were competing for space to sit together—and those who didn’t get in early enough were literally left without a seat.

Activity-based approaches to workplace productivity are particularly problematic for companies shifting to more agile ways of working. Agile is fast becoming an effective and efficient way to organize the way a company is run. One of the keys to success for agile is having small, persistent, cross-functional, and collocated teams working to deliver a shared outcome.

Research backs up the benefits of having long-standing, persistent teams work together. Recent studies have shown that the “cohesion” of teams is a key driver of performance.

To create cohesion, teams must work together over a long period of time to achieve a shared goal.

Cohesion can also boost innovation. Research also shows that dedicated teams aren't just more productive, they're more innovative, particularly when tackling tasks that are not well defined.

For all of these reasons, the physical workspace is an important part of making agile work in large organizations. Here are four things to consider when designing workspaces to make agile teams effective:

- Workspaces need to be designed so that collocated and persistent agile teams can sit together.
- Because agile is a very visual way of working—with sprint boards, customer journeys, personas, and so on—and because much of this content is physically up on the wall, teams need wall space to post their agile project management artifacts.
- Agile ceremonies play an important role in team collaboration. Teams need spaces to conduct daily agile ceremonies, such as standups and sprint planning (both features of agile), that won't disturb those around them. They also need access to larger spaces for more long-term planning, as with retrospectives and showcases (additional features of agile).
- Teams need the right balance between quiet working areas and collaboration areas, while ensuring adequate space for people to share learning across agile teams.

Many different layouts can be employed to achieve an agile workspace: cubicles, open plan pods, design rooms, and more. When designed right, this can be very efficient; however, it must be a deliberate design effort and it may require significant investment to break away from a traditional corner-office style.

When it comes to workplace productivity, there is no one-size-fits-all approach for the physical environment, but it's essential to understand how teams work together and design physical workspaces that can truly enhance their effectiveness.

***Paul McNamara** is a senior advisor in the Sydney office of Boston Consulting Group, and he is the agile transformation lead for Asia-Pacific. You may contact him by email at mcnamara.paul@bcg.com.*

NOTE TO THE READER

Acknowledgments

The authors are grateful to the global community of agile practitioners at BCG; these articles leverage their experience and expertise. They also specifically thank Michael Grebe, Hana Montgomery, and Stuart Scantlebury for their input.

And they thank Katherine Andrews, Gary Callahan, Alan Cohen, Catherine Cuddihee, David Duffy, Abby Garland, Robert Hertzberg, Kim Friedman, Meghan Huff, June Limberis, Shannon Nardi, Amy Strong, and Mark Voorhees for their editing, writing, design, and production contributions.

For Further Contact

Martin Danoesaastro

Senior Partner and Managing Director
BCG Amsterdam
+31 20 548 4000
danoesaastro.martin@bcg.com

Benjamin Rehberg

Partner and Managing Director
BCG New York
+1 212 446 2800
rehberg.benjamin@bcg.com

Andrew Agerbak

Director
BCG London
+44 20 7753 5353
agerbak.andrew@bcg.com

Koen Alfrink

Principal
BCG Melbourne
+61 3 9656 2100
alfrink.koen@bcg.com

Vinciane Beauchene

Partner and Managing Director
BCG Paris
+33 1 40 17 10 10
beauchene.vinciane@bcg.com

Vikram Bhalla

Senior Partner and Managing Director
BCG Mumbai
+91 22 6749 7000
bhalla.vikram@bcg.com

Walter Bohmayr

Senior Partner and Managing Director
BCG Vienna
+43 1 537 56 80
bohmayr.walter@bcg.com

Kaj Burchardi

Platinion Managing Director
BCG Amsterdam
+31 20 548 4000
burchardi.kaj@bcgplatinion.com

Stephen Edison

Principal
BCG Dallas
+1 214 849 1500
edison.stephen@bcg.com

Grant Freeland

Senior Partner and Managing Director
BCG Boston
+1 617 973 1200
freeland.grant@bcg.com

Norbert Gittfried

Associate Director
BCG Frankfurt
+49 69 91 50 20
gittfried.norbert@bcg.com

Claus Helbing

Platinion Managing Director
BCG Munich
+49 89 231 740
helbing.claus@platinion.com

Pim Hilbers

Principal
BCG Amsterdam
+31 20 548 4000
hilbers.pim@bcg.com

Peter Hildebrandt

Partner and Managing Director
BCG Los Angeles
+1 213 621 2772
hildebrandt.peter@bcg.com

Hanno Ketterer

Senior Partner and Managing Director
BCG Amsterdam
+31 20 548 4000
ketterer.hanno@bcg.com

NOTE TO THE READER

Djon Kleine

Project Leader

BCG San Francisco

+1 415 732 8000

kleine.djon@bcg.com

Steven Kok

Project Leader

BCG London

+44 20 7753 5353

kok.steven@bcg.com

Fabrice Lebegue

Platinion Managing Director

BCG Montreal

+1 514 228 5900

lebegue.fabrice@bcgplatinion-ma-
ya.com

Erik Lenhard

Associate Director

BCG Munich

+49 89 231 740

lenhard.erik@bcg.com

Deborah Lovich

Senior Partner and Managing Director

BCG Boston

+1 617 973 1200

lovich.deborah@bcg.com

Elizabeth Lyle

Principal

BCG Boston

+1 617 973 1200

lyle.elizabeth@bcg.com

Paul McNamara

Senior Advisor

BCG Sydney

+61 2 9323 5600

mcnamara.paul@bcg.com

Jérôme Moreau

Associate Director

BCG London

+44 20 7753 5353

moreau.jerome@bcg.com

Neil Pardasani

Senior Partner and Managing Director

BCG Los Angeles

+1 213 621 2772

pardasani.neil@bcg.com

Christian N. Schmid

Principal

BCG Munich

+49 89 231 740

schmid.christian2@bcg.com

Liza Stutts

Principal

BCG Boston

+1 617 973 1200

stutts.liza@bcg.com

© Boston Consulting Group 2018. All rights reserved.

For information or permission to reprint, please contact BCG at permissions@bcg.com.

To find the latest BCG content and register to receive e-alerts on this topic or others, please visit bcg.com.

Follow Boston Consulting Group on Facebook and Twitter.

