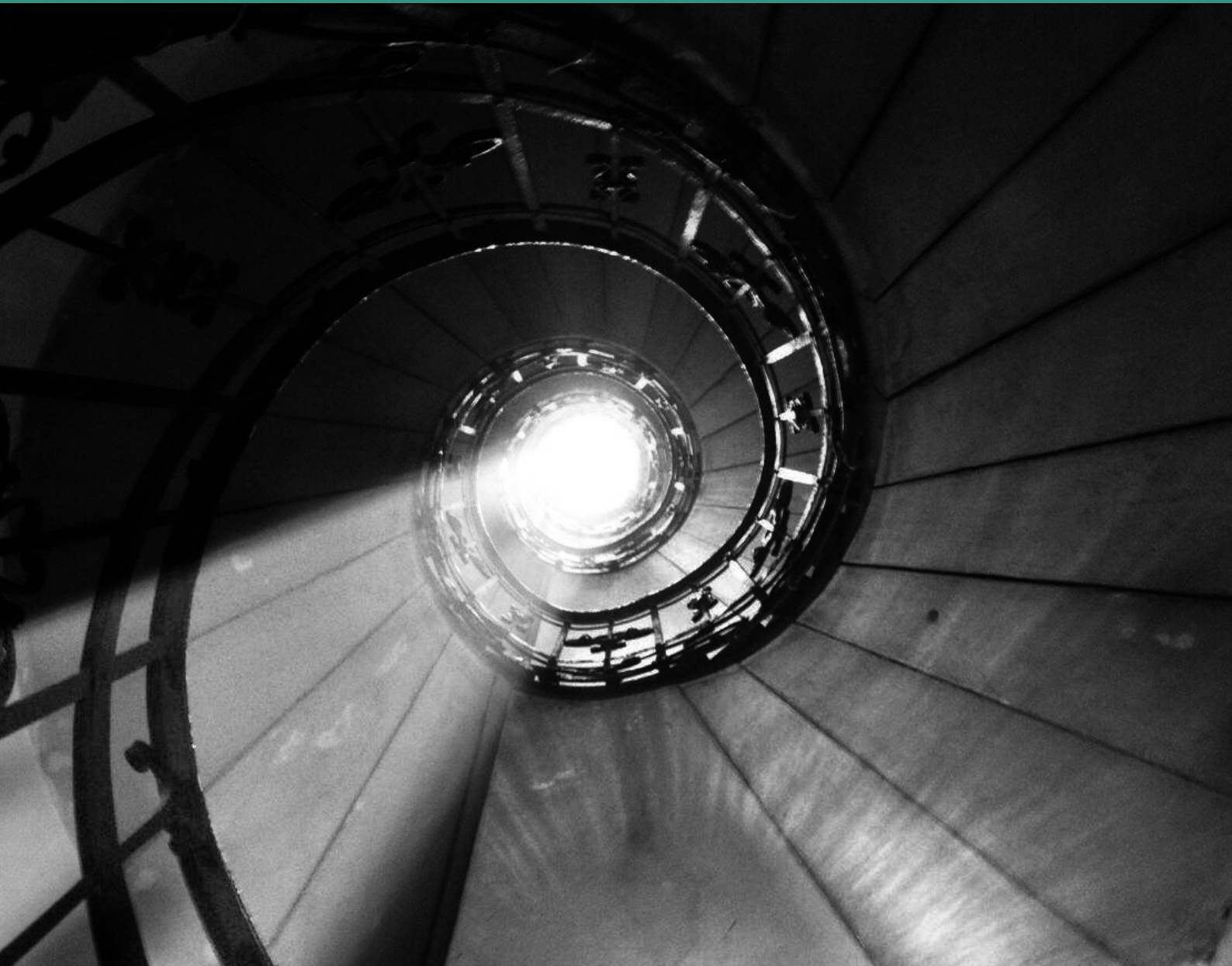


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Are You Set Up to Achieve Your Big Data Vision?



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Are You Set Up to Achieve Your Big Data Vision?

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AT A GLANCE

Big ideas for big data are not in short supply. Whether it is improving customer service, enhancing operational efficiency, or creating new revenue streams, most companies have high ambitions. Yet a recent survey by The Boston Consulting Group revealed a troubling gap between the big data capabilities that companies have and those they aspire to have. Businesses need to close that gap—and soon—to avoid missing the opportunities that big data presents.

TAKING A FOCUSED APPROACH

Companies should focus on identifying initiatives that enable them to create value while building their capabilities in a coordinated way. Critical to a company's ability to focus is its ability to prioritize.

BUILDING AN ACCELERATOR

Identifying and developing data initiatives have traditionally been the domain of the business side. But creating a core analytics group that works with the business units in a hub-and-spoke fashion improves and accelerates a company's efforts. The analytics experts enable developing, testing, and learning from big data initiatives with greater effectiveness, speed, and agility.

BY NOW, MOST COMPANIES have big hopes for big data. They see great potential in using sophisticated analytics to preempt problems, such as customers leaving or equipment failing, or to gain an advantage, such as perceiving an industry trend. But success may prove surprisingly elusive. The big data vision of many companies is murky, and the path is fraught with obstacles.

A recent survey by The Boston Consulting Group revealed a worrisome gap between the big data capabilities that companies have and those they aspire to have in three years. The low maturity of one in particular—the ability to prioritize—is especially concerning, because it is so fundamental to success.

In addition, the big data capabilities that companies are pursuing are being developed ad hoc. The survey suggested that businesses are taking a scattershot approach to choosing big data initiatives. When companies pursue opportunities in a one-off way, their capabilities develop in a similar manner. Leaders build capabilities that get a specific analytics initiative off the ground, rather than competencies that over time can be integrated to pursue more advanced and more rewarding initiatives.

A scattershot approach also develops initiatives in an unconnected and decentralized way. Business units often do not know about—and thus are not able to take advantage of—data-related resources, talent, or insights developed by other business units. The initiatives may be successful, but companies risk missing big opportunities—or worse, ceding them to competitors.

Companies can change their game plan, however. By taking a focused approach, businesses can home in on the initiatives that, one by one, will deliver the value of big data and, at the same time, build their capabilities in a coordinated way. Then by accelerating—developing initiatives and capabilities with greater speed and agility—companies can quickly see results, gain experience, and apply the lessons learned.

Focusing and accelerating can sharpen and deliver a big data vision. Yet the survey suggested that many companies have not set the stage for proceeding in this way. That's something that can—and must—change. Big data is at an inflection point, and businesses can't afford to be behind the curve.

A Focused Approach

Critical to a company's ability to focus is its ability to prioritize. Yet, that is among companies' least developed capabilities. BCG's survey found that respondents

A recent survey suggested that businesses are taking a scattershot approach to choosing big data initiatives.

reported very low maturity in their ability to prioritize big data opportunities: the average rating was 2.5 on a scale from 1 to 5, where 1 was the lowest maturity level and 5 was the highest. (See the sidebar “About the Survey.”) Companies need to develop this ability in order to focus on the best initiatives and cultivate other capabilities.

Pinpointing the Best Opportunities. With so many ways to put data to work, it is crucial for companies to prioritize opportunities. This means assessing the potential benefits of each big data initiative as well as the feasibility. Looking at both of these areas is crucial: projects may shoot for the moon, but without the right capabilities in place to achieve them, they’ll fall into an abyss.

To analyze the benefits, companies need a custom yet structured approach—one that uses the organization’s current goals and priorities to establish a set of criteria and weight each standard. After scoring the criteria, each initiative is then plotted. (See Exhibit 1.)

ABOUT THE SURVEY

BCG’s Insights on Data Ecosystem and Analytics (IDEA) benchmark—a survey completed in 2016—examined the big data capabilities of 139 companies. They represented a variety of industries, including consumer goods, energy, finance, health care, media, technology, and telecommunications. The companies also stretched the globe, with 60% based in North America, 16% in Europe, and the remainder in Africa, Asia, Australia, or South America. (The high proportion of North American companies was intentional, as this is the most advanced region for big data initiatives, and we wanted to capture results from the most data-savvy enterprises.)

Company size also varied: 27% of participants earned more than \$20 billion in annual revenues, yet 30% had revenues of under \$500 million. Conglomerates with household names and tens of thousands of employees were represented, but so, too, were smaller, less-well-known businesses. Indeed, one-quarter of

survey participants had fewer than 500 employees.

In all, 23 capabilities were explored, each one falling into one of four categories: data vision, data usage, data engine (competencies around personnel, process, and technology), and data ecosystem (capabilities that are tapped to create partnerships and other external relationships). For each capability, the companies were asked to rate their current maturity level on a scale of 1 to 5, corresponding to ad hoc, opportunistic, recurring, managed, and optimized, respectively. Companies were then asked to rate their aspiration level—the maturity level they sought to attain within the next three years.

The survey made one thing clear: participating companies have their work cut out for them. The average aspiration level was 4.07; however, the current maturity level averaged only 2.73.

The criteria for an initiative's benefits might include, for example, the potential value that an opportunity can create (whether in a direct way, such as boosting revenues, or in an indirect way, such as increasing customer satisfaction); the likely impact on the customer experience; the possible strategic fit; or the potential integration with the technology roadmap. Factors that are relevant for one company may not be appropriate for others.

Similarly, weighting must be tailored to the company. It may be more important to some companies to improve the customer experience than to create revenues, in which case this should be reflected in the weight given to each criterion.

A criterion's weight has a direct impact on where initiatives fall on the benefits axis, so changing a weight can make or break the case for a project. That's something executives know, and they will often stress the importance of certain criteria to improve the odds of getting a green light for a project. Landing on weights that satisfy all stakeholders can therefore be tricky; it is important to involve key decision makers in the discussion and allot sufficient time. In our experience, it can take multiple meetings—three is the usual number—to determine the optimal weights.

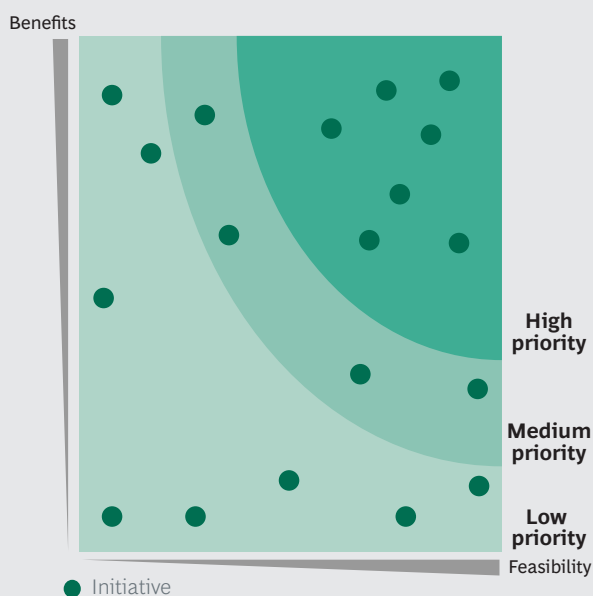
To determine the feasibility criteria, companies should consider each capability the initiative calls for—such as company access to the necessary data and customers' trust in such use—and gauge how each measures up to the required maturity level.

EXHIBIT 1 | Prioritizing Data Initiatives Requires Analysis

EXAMPLE SET OF CRITERIA FOR EVALUATING EACH INITIATIVE



PLOTTING THE INITIATIVES REVEALS THE TOP OPPORTUNITIES



Source: BCG analysis.

Other factors that help determine feasibility—such as regulatory constraints and the time to market—should be assessed as well. Since determining current and required maturity levels often calls for technical expertise, the CIO, along with representatives from IT and operations, should take part in the analysis.

Selecting and scoring the criteria, and then plotting the initiatives, helps companies see which opportunities warrant their focus. This process can also clarify which capabilities decision makers should direct their attention to.

Taking a focused approach to capability building is important because of the sheer number of skills, processes, and technologies that can come into play.

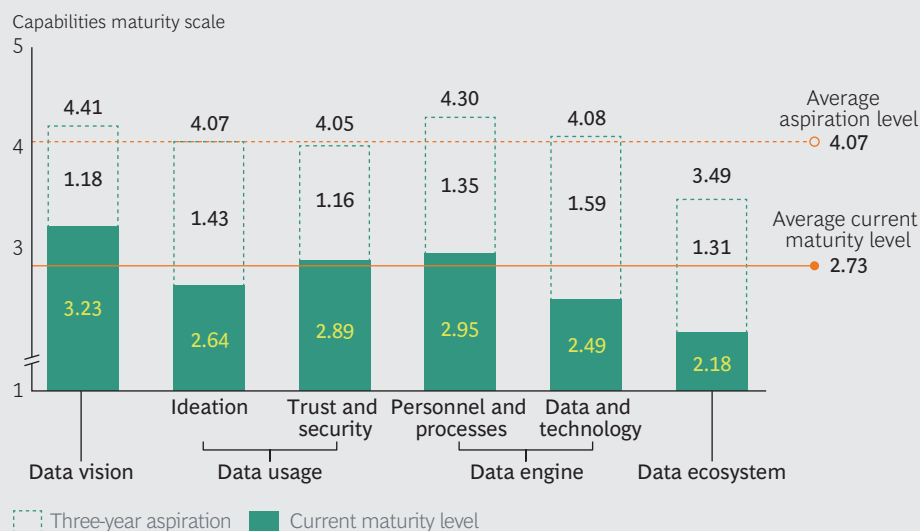
Developing the Right Capabilities. Taking a focused approach to capability building is important because of the sheer number of skills, processes, and technologies that can come into play. Big data initiatives draw on—or should be drawing on—a deep roster of capabilities, touching all aspects of a company’s operating model. (See “*Making Big Data Work in Retail Banking*,” BCG report, November 2015.) Indeed, we count 23 key capabilities that fall into four groups:

- **Data Vision.** These capabilities are crucial in determining the role data and analytics play in a company’s business model and strategy and the impact on value creation.
- **Data Usage.** These skills enable a company to generate and evaluate ideas for using data. Evaluating an idea can require determining if a use is permissible, the benefits it can bring, or if it should be prioritized. These abilities also are important to managing privacy, ensuring data security, and winning the trust of customers.
- **Data Engine.** These capabilities center around the structures—personnel, process, and technology—that enable a company to collect, store, manage, and use data.
- **Data Ecosystem.** These skills are tapped to create partnerships and other external relationships that play a role in big data business models and strategies.

Clearly, companies can’t develop all of these capabilities at the same time. But the survey suggested that respondents do indeed plan to take an across-the-board approach. For nearly every capability, there was a significant gap between the current maturity level and the level companies aspire to reach within the next three years. The gap was especially pronounced in the latter three groups: data usage, data engine, and data ecosystem. (See Exhibit 2.) Boosting so many capabilities simultaneously—or nearly so—is bound to be a challenge for many companies. One way companies can determine where to focus is to look at the initiatives that fall outside the high-priority quadrant—those with high benefits but average or low feasibility.

The survey results also suggested that many companies may not fully appreciate the value of certain capabilities. Respondents reported particularly low maturity for capabilities to develop partnerships and other external relationships. Indeed, relatively few companies—some 30%—have engaged in partnerships or considered meaningful collaboration with peers. Yet in practice, a data ecosystem often proves to be an essential component of successful big data initiatives. Few companies have end-to-end capabilities in-house, making partnerships and external relationships

EXHIBIT 2 | Companies' Capabilities Have a Long Way to Go



Source: BCG's Insights on Data Ecosystem and Analytics benchmark.

the fastest way—and often the *only* way—to obtain the necessary knowledge and skills. Establishing a broader ecosystem can also provide access to data that companies need but don't have. Yet of the four groups, capabilities in the data ecosystem had not only the lowest current maturity level (2.18) but also the lowest aspiration level (3.49). This suggests that many companies need to instill a basic understanding of big data initiatives—and the resources that make it work—throughout the organization.

Left Foot, Right Foot. Methodically prioritizing initiatives helps companies focus on pursuing the best opportunities and developing the right capabilities. Ideally, the journey toward a big data vision should be like climbing a flight of stairs: with each step or initiative, a company creates value and develops competencies that support its next step and gradually builds a robust set of capabilities. Companies that want to speed this process along should bring their analytics experts into the mix.

Hitting the Accelerator

Traditionally, identifying data initiatives has been the domain of the business side. But involving analytics experts in initiative ideation, prioritization, and ultimately execution has benefits—if done in an efficient and effective way. We've found that the classic hub-and-spoke operation model ensures that companies reap these benefits.

The hub consists of a core analytics group that has big data talent and skills. This is not a “ministry of data” but a lightweight organization that is home to the data scientists who design and execute advanced analytics, as well as the data engineers who assemble and clean data, enforce data management and security, and define the data architecture. The spokes are the individual business units.

One benefit of involving analytics experts is that they can improve how companies prioritize and attack big data opportunities. The model ensures this by fostering interaction and collaboration between the analytics group and the business units. The benefits criteria, for example, can be more accurately weighted when the head of the analytics group and its specialists are included in prioritization discussions.

Another advantage is that analytics experts can help companies raise the organization's awareness and knowledge of big data. Here again, the model's promotion of interaction and collaboration helps business unit leaders gain a better understanding of what is and isn't possible with big data—knowledge that percolates across the unit. At the same time, analytics experts garner a better understanding of business needs and how they can be tackled.

The biggest benefit the analytics experts bring is speed. The group can help accelerate big data initiatives and capability building.

But perhaps the biggest benefit the analytics experts bring is speed. By working jointly with the business units, the analytics group can help accelerate big data initiatives and capability building. Indeed, we tend to describe the analytics group as, simply, the accelerator. And it lives up to the billing in several important ways:

- **Speeding the Identification of Promising New Opportunities.** As the hub for big data initiatives, an accelerator sees the results from all projects. It can therefore spur others in two ways: by sharing project lessons and insights across business units and by thinking of new initiatives. Knowing the outcomes from other initiatives will help the business units generate new ideas, and having a view into all big data initiatives will help the accelerator spot opportunities.
- **Providing Quick Access to Internal and External Resources.** As a focal point of talent and tools, the analytics group coordinates internal resources. This not only ensures that skills, available data, and technology are used more efficiently across the company but also helps steer business units to resources they may not even know exist (for example, data or insights). As the coordinator of external resources and partnerships, an accelerator can guide business units to the broader analytics ecosystem to access data and capabilities that may not be available in-house. Without such coordination, external resources tend to be used in an ad hoc and often suboptimal way—if they are used at all. If the accelerator is too busy to join a project, it can still provide standardized tools and practices, helping the business unit minimize missteps and delays.
- **Helping to Build Capabilities in a Smart and Coordinated Way.** Taking the stairstep path is difficult; indeed, it's easy to get off track. On one hand, if a company focuses too much on benefits—building out initiatives that provide value but don't require new skills or resources—crucial capabilities might not be developed for when they are needed. On the other hand, if a company overemphasizes capabilities—building out long-term competencies but not creating near-term value—it risks building a white elephant: an infrastructure that looks great (and costs plenty) but is significantly underused.

An accelerator speeds the development of capabilities by helping to avoid these pitfalls. (See Exhibit 3.) With its holistic view of capabilities and an understanding of the full opportunity portfolio, a hub can ensure that initiatives and

capabilities are pursued in a coordinated way, one that advances the company swiftly toward its long-term vision.

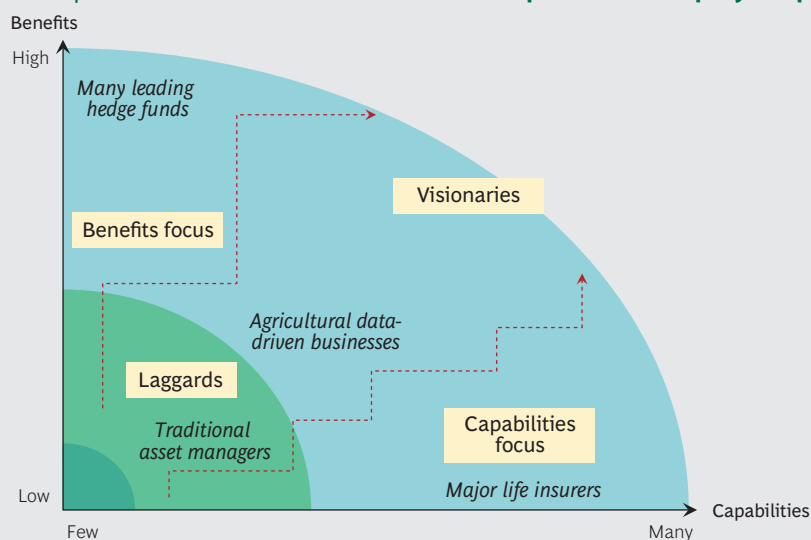
- **Working in an Agile Way and Employing a Test-and-Learn Approach.**

Working in an agile way is essential for implementing big data initiatives. Under the agile model, small, cross-functional teams develop and test initiatives in rapid, frequent iterations, using the lessons learned to refine those projects and explore new ones. The accelerator is well suited for an agile way of working, as it brings members from the business units and the accelerator onto joint teams and fosters collaboration and interaction.

An interesting finding from our survey was that, overall, it wasn't the largest companies that had the most mature analytics capabilities or the highest aspirations. It was, instead, a group of companies that fell between the largest and smallest respondents. Why did these "midsize" players come out on top? Consider the characteristics of these companies. They tend to have greater resources than smaller enterprises, yet at the same time, they are not as encumbered as larger companies by legacy systems or layers of hierarchy. In short, they tend to be better positioned to implement an agile model.

Although there is no textbook example of how a business unit and an accelerator should work together (it will vary from one company to another), there is a general process. (See Exhibit 4.) Each side brings crucial skills to the table. The business unit provides the subject matter experts and the product owner; the accelerator has the analytics experts, the data specialists, and the development lead. Together, they build minimum viable products via frequent cycles in which they develop, test, and learn.

EXHIBIT 3 | Initiatives Should Build Robust Capabilities Step by Step



Businesses may emphasize benefits or capabilities, but over time they must pursue both to achieve their vision

Source: BCG analysis.

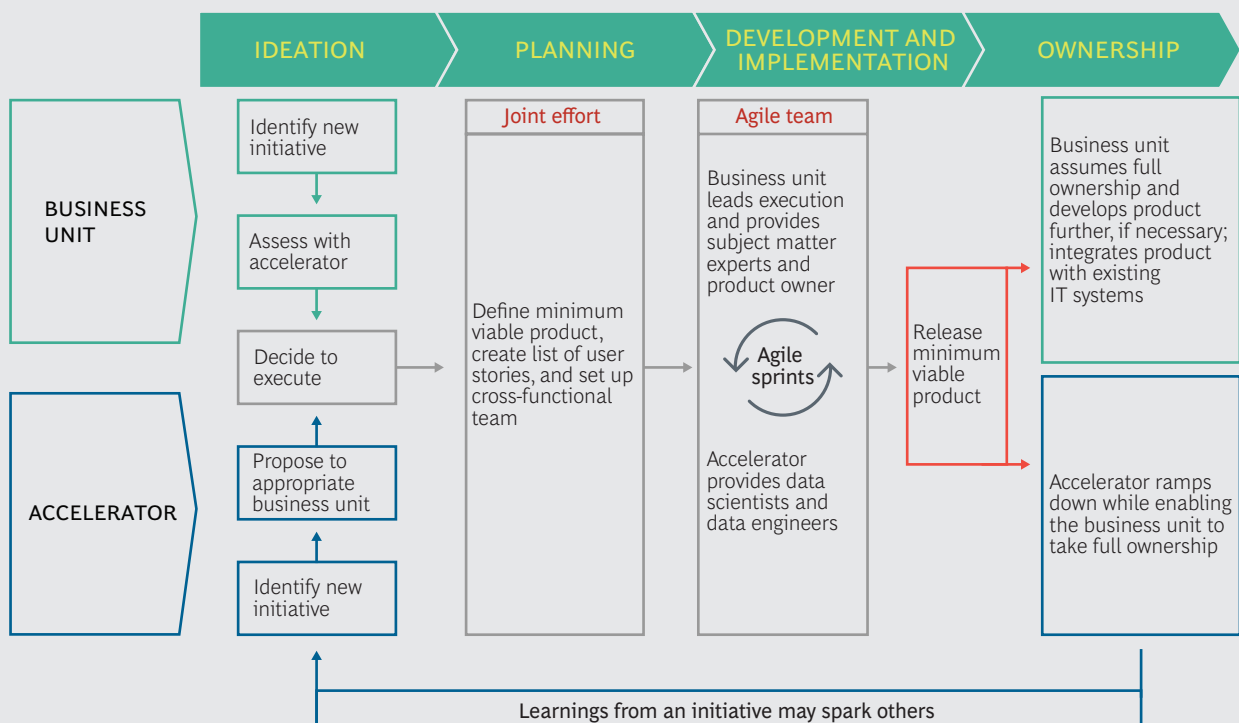
After a minimum viable product is released, the business unit takes over full ownership and develops the product further, if necessary. The accelerator, meanwhile, takes the insights gleaned from the experience to identify new initiatives for other parts of the organization. And the cycle begins anew.

In effect, the path to realizing a big data vision is itself a series of iterations. Each initiative that is undertaken influences the direction of the next initiative. The process can be likened to a GPS that gets smarter with every turn, plotting a faster route to an even better destination.

The hub-and-spoke model has been adopted and implemented successfully in the field. The CFO at a leading financial services provider recognized that analytics efforts were fragmented across the company and unable to create real impact. The company established a center of excellence (CoE) comprised of 75 professionals, including data scientists, data engineers, and business analysts. The group works closely with business leaders to identify big data initiatives that address critical business pain points, prioritize those initiatives according to clear and measurable returns, and implement the initiatives using cross-functional teams. This CoE significantly accelerates the delivery of value and, at the same time, enables the company to leverage the scale and standards of its analytics program.

The model also lends itself to great flexibility: it can be implemented in a variety of ways, tailored to the specific requirements—and characteristics—of a company.

EXHIBIT 4 | An Accelerator Can Speed Big Data Initiatives



Source: BCG analysis.

Consider, for example, the case of a leading European bank: the maturity of its big data capabilities varied significantly across business lines. It built a central hub of approximately 40 people and divided them into mainly two groups—advanced analytics and data engineering—that provide each business line with the support needed. In retail banking, for example, analytics were widely used in operations and decision making, so its big data capabilities were already formidable. Thus, the hub mainly provides supplemental assistance for advanced initiatives. In wealth management, by contrast, analytics were not widely used, so the hub provides much more comprehensive support, in effect “lending” full teams of experts to create analytical models and then taking charge of implementation and monitoring.

Getting the Ball Rolling

Focusing and accelerating are essential for quickly achieving a big data vision and turning it into the value a company seeks. We suggest companies start by building a core accelerator group and then testing the hub-and-spoke model. Pilots are a good way to do the latter, but pick projects carefully. Choose pilots that are meaningful to the business but not overly ambitious. In addition, select projects that use tried-and-true capabilities, rather than ones that are new or not yet running at 100%. These projects don’t have to be eye-catching; the point is to get the ball rolling by proving the model quickly and showing that this way of working makes sense—and delivers results. Allow sufficient time, too. Getting an accelerator set up—at least in an initial form—and launching pilots can be a six- to nine-month process.

It’s an effort worth making, though. By thoughtfully choosing—and relentlessly pursuing—opportunities that drive value, capability building, and competitive advantage, companies can achieve their vision for big data. Better yet, they can exceed it.

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