



Growing prosperity: An overview

Developing Repeatable Models® to scale the adoption of agricultural innovations

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The Bill & Melinda Gates Foundation works to help all people lead healthy, productive lives. In developing countries, it focuses on improving people's health and fighting hunger and poverty. In the United States, it seeks to significantly improve education so that all young people have the opportunity to reach their full potential.

Microdrip irrigation systems. Drought-resistant hybrid seeds. Asset-backed microloans. These innovations can transform the lives of those farming on less than two hectares of land and earning less than \$4 a day. Yet until relatively recently, they were unknown in most smallholder farmer communities.

What does it take to get the developing world's smallholder farmers to try one of these products? Importantly, what would it take to get them to buy these products again and again? For many of the 2.5 billion people living at the "base of the pyramid" and relying on agriculture for their livelihood,¹ adopting these innovations could improve their lives and the lives of future generations.

To answer these questions, Bain & Company and Acumen, with the support of the Bill & Melinda Gates Foundation, undertook a joint four-month research effort² focused on South Asia (India and Pakistan) and sub-Saharan Africa (Ghana, Kenya and Uganda) to understand what it would take to catalyze the large-scale adoption of innovations that could lead to more secure and prosperous lives for smallholder farmers.

Focusing on the pioneer firm to understand what drives success

In recent years, innovations for smallholder farmers have frequently been introduced by pioneer firms—entrepreneurial companies that develop and offer market-based innovations to serve the poor in places where governments and traditional aid have fallen short. These firms provide smallholder farmers with access to products, services and markets, which can significantly improve their productivity, incomes and lives. Although pioneer firms have a social purpose, they are typically set up as for-profit companies, aiming to quickly and sustainably scale their operations and broaden their impact. While these firms offer huge promise, they face challenges that make their very existence, let alone their growth, extremely challenging. These firms serve hard-to-reach customers with limited disposable incomes, and they do so in the context of broader systems that often are broken. As a result, very few of these firms achieve scale and even fewer achieve both scale and profitability.

"Growing prosperity" focuses on the interaction between farmer customers and pioneer firms and what needs to happen to spur sustained adoption, allowing these firms to serve hundreds of thousands, or even millions, of smallholder farmers.

While there is extensive literature on agriculture in the developing world, it focuses primarily on the actions of nongovernmental organizations (NGOs), aid agencies and governments, as well as on farmers' decision making.³ In addition, much of that literature has been narrowly focused on one crop or one technology in a certain region and lacks specific business implications to inform management decisions. Relatively little has been written about the actions of the pioneer firms themselves—how they develop and execute their strategy and operating model as they grow and, in the process, encourage broad adoption of their innovation.

"Growing prosperity" aims to fill that gap by focusing on the interaction between farmer customers and pioneer firms, and what needs to happen in this interaction to spur sustained adoption, allowing these firms to serve hundreds of thousands, or even millions, of smallholder farmers. By understanding what is working in these interactions, other actors in the agricultural system can also better assess what they should, and should not, do to enable success at this primary point of contact.

Key findings: Driving adoption with smallholder farmers

Pioneer firms that introduce an agricultural innovation face a number of unique challenges that can impede both the rate and the scale of adoption of a new product or service:

A challenging customer segment. Smallholder farmers have low purchasing power, often linked to crop or live-

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stock cycles. Most of what they can buy to increase farm output is either too costly or will yield unpredictable results. As such, it is difficult for firms to acquire a critical mass of early adopters (those who adopt the product within the first year of it being made available to them) who have both the inclination to consider an innovation and the disposable income to pay for it.

Pockets of applicability. An agricultural product or service will perform differently in different environments. For example, seeds will have higher or lower yields depending on altitude and soil acidity. Finding these pockets of applicability takes time, as a company and its customers come to understand the impact of ecological conditions on product performance.

Disconnected markets. Even when a new product is well adapted to local conditions, the spread of this innovation across wide areas is further complicated by the geographic dispersion of farmers and the varying levels of infrastructure—both roads and communications—in rural areas.

Immature business models. Given the small number of successful, large pioneer firms working with smallholders, there is a dearth of proven models for founders to emulate. Furthermore, new businesses often lack the strategies, processes, talent, systems and metrics to efficiently and effectively manage the growth of their firms. Finally, growing a pioneer firm requires a series of iterations of its business model, which make a company's journey to scale anything but linear.

Three key findings from our research point to what pioneer firms and other actors must do to overcome these challenges and spur greater adoption of agricultural innovations by smallholder farmers.

First, to address the structural barriers to adoption, pioneer firms must systematically ensure that the Four A's of adoption are continuously in place for their farmer customers:

Awareness: In our study, more than 65% of early adopters heard about a new product or service from a company official; this drops to only 28% for late adopters, for whom friends and relatives constitute the primary source of information and influence. Pioneer firms need to

strategically target early adopters, invest in higher-touch marketing methods to build trust with these early adopters and leverage “promoters” to spread and sustain awareness later in the adoption cycle. Awareness must also extend to include technical knowledge required to effectively use the new product or service.

Entrepreneurs who invest time in achieving a nuanced understanding of smallholder farmers will reap significant rewards: The Four A's will be transformed from obstacles into drivers of adoption.

Advantage: Our research indicates that the extent to which a product is seen to increase financial standing is the most powerful driver of adoption for an agricultural innovation: more than 60% of farmers surveyed said they tried a new product or service because it would increase their wealth. Pioneer firms must make sure—often by facilitating trialing—that customers understand and believe how the new product or service will offer concrete, financial benefits over what they are currently using or doing, and construct their business model (including partnerships required along the value chain) to reliably deliver on the perceived benefits.

Affordability: The innovation must be affordable not just in terms of the absolute price; it also must be available for purchase at that price when farmers have money in their pockets based on their cash-flow cycles. Pioneer firms must optimize unit economics and facilitate incremental purchases to minimize cash outlay required by farmer customers. More often than not, they also need to consider the provision of affordable financing options to put their products within reach, when they are needed.

Access: Easy physical access is important given that rural infrastructure is often poorly developed. However, pioneer firms should consider existing retail options and actual buying behaviors and mobility constraints

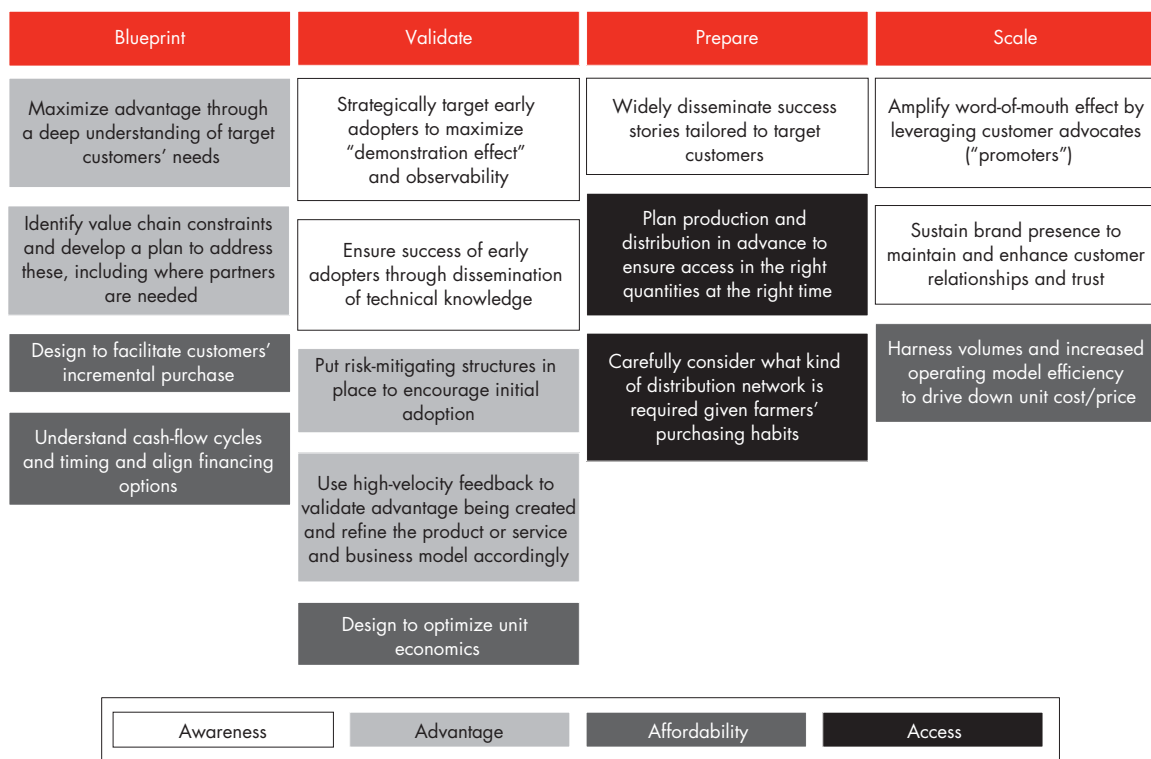
The Four A's, from blueprint to scale

As in any other business context, the maxim “know thy customer” lies at the heart of promoting the adoption of agricultural innovations. No matter how game-changing an innovation may be, pioneer firms must have a deep understanding of, and commitment to, smallholder farmers to drive sustained adoption of their product or service. The most successful entrepreneurs understand not only how farmers live and work but also what they value, hope for and fear.

The Four A's are a simple and actionable framework intended to help the entrepreneurs leading these firms understand how their target customers—in this case smallholder farmers—experience their products or services and business models. Each “A” has particular importance at certain stages of a firm’s development. The report “From Blueprint to Scale” provides a helpful framework for outlining the four stages of a pioneer firm.⁴

The Four A's framework can be mapped against these stages of a pioneer firm’s development as it grows to scale.

Figure 1: Creating a foundation for adoption



Source: Bain & Company

A checklist: The Four A's

Getting the Four A's right is paramount for creating a foundation for adoption. Below is a set of key questions to help entrepreneurs systematically ensure that each of the Four A's is in place for their farmer customers.

Awareness

- To what extent do farmers know about your product or service *category* (e.g., microfinance, micro-drip irrigation) and about your specific company *offering*?
- What characteristics (e.g., demographic, behavioral, environmental) should guide your sales team's *early adopter* customer targeting efforts?
- Is the accompanying information (e.g., planting techniques, installation) critical to your product's effective use always shared and well understood?
- What are the most effective communication channels to reach your target customers?
- How will you identify the "promoters" among your early adopter customers and empower them to tell other prospective customers about your product or service?

Advantage

- Have you understood the specific need your company is addressing from the farmer's point of view?
- Do smallholder farmers sufficiently understand how your product or service will increase their income?
- What alternative solutions exist today that your target farmers are not using? Why not?
- Which gaps or constraints across the value chain can you address directly and which will require the support of partners?
- Do you have a clear process in place to observe your innovation in action with early adopters and use the feedback to refine your proposition?
- How will exogenous factors (price shocks or environmental changes) affect the advantage provided?
- How much and what kind of risk mitigation is required for the earliest adopters?

Affordability

- What are the key cost drivers for your product or service on an individual farmer level?
- How can you reduce the cost through redesign of your product or service proposition while delivering the requisite functionality for your customers?
- To what extent can the timing of the purchase of the product or service be managed to enhance its affordability?
- Given the income levels and cash-flow profiles of your target customers, what financing options might you need to provide?

Access

- How and where do your target customers currently purchase agricultural products and services?
- What is the condition of the physical infrastructure in the areas you are serving?
- To what extent are your target customers willing to travel and have access to means of transportation?
- Are there existing retail outlets that could reliably and effectively sell your product (providing both the required information and physical distribution)?
- How would selling through a retail outlet affect your economics and your competitiveness from both the retailer and end-customer perspective?
- To what extent is the advantage provided by your product affected by distribution timing?

before defaulting to a last-mile distribution model. Again, timing is an important consideration here: A product or service must be available when it is needed based on a particular crop or livestock cycle. Pioneer firms must therefore set up their supply chains and distribution networks to ensure delivery of their products when and where they are needed.

While these Four A's are not revolutionary,⁵ we learned from our research that few firms are able to systematically address each of these elements in a sustained way as they grow. None of the Four A's alone is sufficient to drive adoption of an innovation. However, entrepreneurs who invest time in achieving a nuanced understanding of smallholder farmers will reap significant rewards: The Four A's will be transformed from obstacles into drivers of adoption.

To help firms apply the Four A's, we mapped them against the four stages of a pioneer firm's development, as described in the report "From Blueprint to Scale: The case for philanthropy in impact investing."⁶ While the Four A's are relevant at all stages of a company's growth, advantage and affordability will be the primary focus early on, when the firm is determining a product's fit in the market. Access and awareness will become increasingly important later as the firm focuses on achieving scale (see the sidebar "The Four A's, from blueprint to scale").

Second, pioneer firms need Repeatable Models[®] to overcome the challenges of scaling adoption to hundreds of thousands or millions of farmers across villages, regions and countries. While getting the Four A's right provides the foundation for adoption, firms also need the right strategies, processes, teams and supporting systems to drive adoption of their innovation in an adaptive and increasingly efficient and effective manner, while ensuring their own sustained, profitable growth. In short, Repeatable Models help pioneer firms promote "good scale" that endures while avoiding "bad scale" that is unprofitable and unsustainable. In our research, firms pursuing bad scale had introduced costly complexity by prematurely expanding to adjacencies (new customers, products, geographies or capabilities), while those on the path to good scale were implementing aspects of Repeatable Models.

Repeatable Models help pioneer firms promote "good scale" that endures while avoiding "bad scale" that is unprofitable and unsustainable.

Building Repeatable Models for pioneer firms entails a continuous learning process (see the sidebar "A four-step process for building and executing Repeatable Models"). First, companies focus their Repeatable Models by defining their core market and their distinctive competencies. Before expanding beyond their core, these companies establish clear operating processes and performance management systems, as well as values and behaviors, and embed them into all levels of the organization. As companies expand to new markets, they adopt systematic entry routines while maintaining the agility to adapt. Throughout the process of scaling, they actively gather feedback from customers on whether and how the Four A's are in place and rigorously monitor performance metrics. They then use that information to refine their model to maximize the benefits of the Four A's for the local context. Last but not least, companies invest in the right talent and technology systems to enable the delicate balance of standardization and adaptation as the company grows.

Third, other actors across the agricultural system should tailor their actions to enhance the Four A's and help pioneer firms develop and scale their Repeatable Models to bring their products and services to more farmers. Though an understanding of the key factors of adoption and scale are paramount, firms and farmers do not exist in isolation—they operate within a wider market system. That system can either promote the Four A's and enable the firm to develop its Repeatable Model or hinder the firm's success and slow down adoption. As a pioneer firm grows and begins to reach scale, its interactions with this system (rules and regulations, infrastructure, access to finance and supporting inputs), in addition to its ongoing interactions with other key players within that system (including competitors), will become more

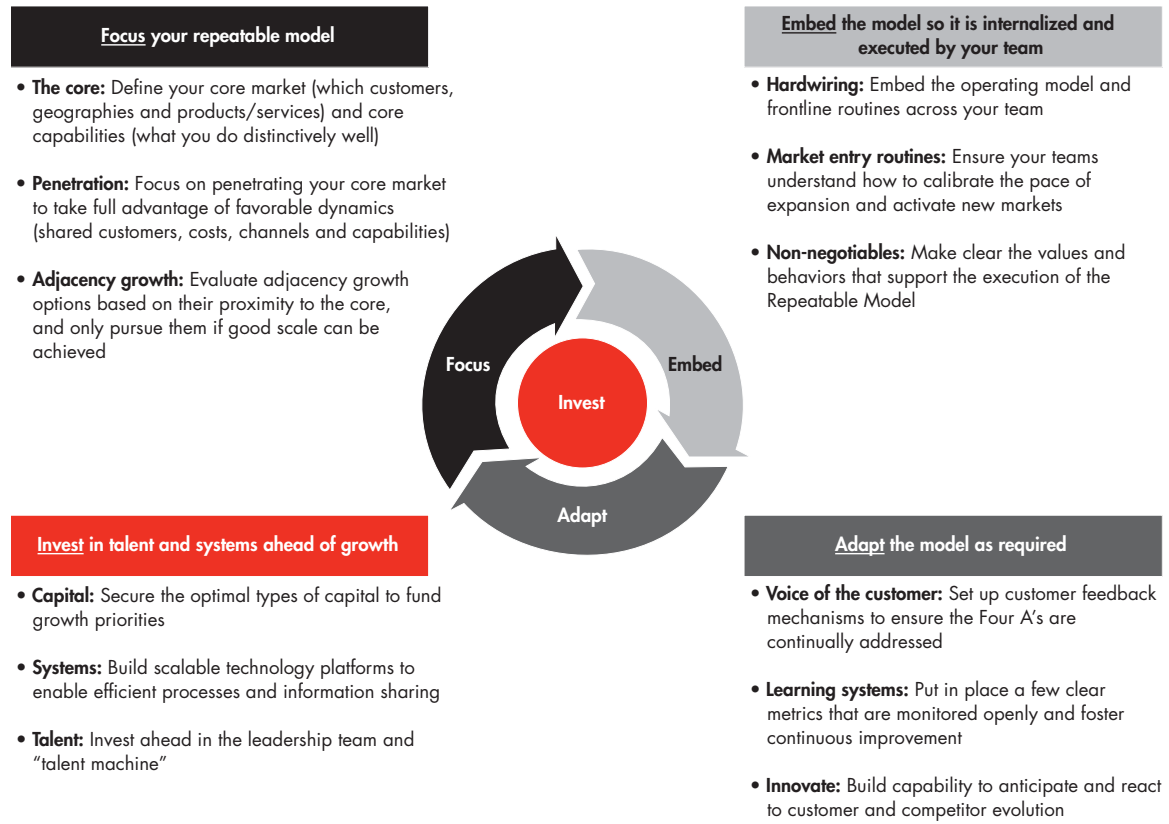
A four-step process for building and executing Repeatable Models

For agriculture-focused pioneer firms, building Repeatable Models is at the heart of achieving scaled adoption.

The best Repeatable Models are built on what companies do best, and they enable the companies to replicate these successes over and over again with new customers and new products, and in new geographies. While the need for, and benefits of, Repeatable Models may be obvious, actually building and executing such a model takes considerable time, effort and patience.

Below are the four key elements for creating a repeatable model, tailored for agriculture-focused pioneer firms operating in very challenging markets and starting from a small base of customers. The goal of this framework is to provide leaders of pioneer firms with a way to think through and discuss their path to “good scale” with their management teams, frontline personnel and investors.

Figure 2: The Repeatable Model framework is a continuous process of appraisal and learning.



Source: Bain analysis

A checklist: Repeatable Models

The questions below will help to facilitate the application of the ideas and principles outlined in this brief, and guide pioneer firms in building and executing Repeatable Models.

Focus

- When was the last time that you had a deep discussion about your “core” with your team? How certain are you that your management team and front line can articulate your core?
- What makes your company uniquely differentiated, now and in the future?
 - Measurable
 - Tangible
 - Decisive advantage
- How do you measure your penetration of your core market?
- What systems and processes do you have in place to assess adjacency growth?
- Are you seeing the costs and risks of complexity? How are you managing these?

Embed

- What are the few most critical frontline routines that really drive strategy and your differentiation? How thoroughly have your frontline employees adopted these routines?
- Do you have key metrics in place that tell you and your employees how well they are delivering against the strategy?
- Do you have metrics in place that signify whether and when you should consider growing to a new area?
- What are your market entry routines?

Adapt

- How much time is lost between decisions, actions and market feedback?
- Do you have learning systems in place that take into account regular input from customers and the front line?
- Do you have systems to step back and address the biggest threats to your current model?
- Have you set up clear structures and processes to continually innovate and capitalize on emerging growth opportunities?

Invest

- Do you have a financing strategy that considers the types of capital available to, and required by, your organization at different stages of its growth?
- Is the technology your business is using enabling or defining it (i.e., are technology solutions designed around your processes, or vice versa)? How scalable are your technology platforms?
- Do you have the right leadership in all parts of your business? How strong is your middle-management “bench depth”? How are you attracting, developing and retaining top talent across your business?

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central to the firm's long-term success. Actors in the agricultural system can and should design investments, interventions and policies in ways that promote the lasting success of pioneer firms and the smallholder farmer customers they serve:

- **Corporations** should build inclusive supply chains that provide smallholder farmers with demand for their agricultural outputs, strengthen their capacity and give them confidence that their investments in innovations will result in sustained wealth increase. By providing investment, expertise, networks and market access, corporations can help pioneer firms build and scale their Repeatable Models, and by extension, reach a large and growing base of smallholder farmers faster and more effectively.
- **Foundations and development agencies** should carefully balance what they do to support individual pioneer firms who can create demonstration effect vs. what they do to facilitate the better functioning of the wider market systems around the firm. At the same time, foundations and development agencies can be more deeply engaged in and supportive of the need to address the strategic issues facing pioneer firms: defining their core market and distinctive capabilities, assessing the robustness of their Repeatable Models and determining when they are ready to expand to product and market adjacencies.
- **Impact investors** should continue to provide the patient capital that ignites entrepreneurship as well as the later-stage investment capital to spur growth and profitability. They must also enhance their post-investment support, particularly by facilitating access to talent and expertise as firms grow.

- **NGOs** should invest in building partnerships with pioneer firms and corporations by facilitating access to smallholder farmers and sharing their deep knowledge of these customers' behaviors and farming practices.

- **Governments** should continue to invest in public goods, such as infrastructure and quality monitoring agencies, while providing financial and regulatory support to help scale pioneer firms.

The agriculture sector requires considerable investment by all sector actors to build a robust and supportive ecosystem, and it needs more capital from investors who take the long view and value social returns. While we are encouraged by the ingenuity and perseverance of the many pioneer firms we have studied, more must be done to support their work. As many management teams at pioneer firms have told us, the work is consistently challenging and takes a very long time to get right, and the rewards, in terms of impact and financial returns, are often uncertain at this early juncture.

The work of these pioneer firms is simply too important to remain sub-scale, and we believe that there is potential for real breakthrough in the next 5 to 10 years. With this study, we hope to help shift the odds more in favor of pioneer firms and the smallholder farmers they serve. We hope that current and aspiring entrepreneurs, as well as other system actors, will find in this study a clear roadmap for driving smallholder farmers' adoption of innovative, value-creating products and services. If successful, this study will help accelerate results for all involved and in so doing, contribute to our collective efforts to create growing prosperity. 

Repeatable Models® is a registered trademark of Bain & Company, Inc.

¹ Kanayo F. Nwanze, Viewpoint: "Smallholders can feed the world" (IFAD, February 2011).

² The core of our primary research was interviews with more than 320 smallholder farmers as well as in-depth discussions with management teams and frontline employees at 11 agricultural pioneer firms serving smallholder farmers. We also consulted with more than 60 external experts.

³ See Abhijit Banerjee and Esther Duflo, "Poor Economics: A radical rethinking of the way to fight global poverty," (New York: PublicAffairs, 2011).

⁴ Harvey Koh, Ashish Karamchandani and Robert Katz, "From Blueprint to Scale: The case for philanthropy in impact investing" (Acumen Fund and Monitor Group, April 2012).

⁵ See C.K. Prahalad, "Bottom of the pyramid as a source of breakthrough innovations," *Journal of Product Innovation Management* 29, no. 1 (2012): 6–12. This article lays out Prahalad's own Four A's (awareness, access, affordability and availability) to stress how innovating to serve the bottom of the pyramid can prompt significant returns for corporations.

⁶ Koh et al., "From Blueprint to Scale," 10–19.

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About our Global Development practice

Bain & Company's Global Development practice partners with innovators, such as Endeavor and Acumen, who use entrepreneurship or entrepreneurial models to drive social and economic change around the world. The firm is deeply committed to social impact and invests significant resources in pro-bono support to help grow local businesses, create jobs and ultimately combat poverty. Bain partners with these and other organizations to develop and implement strategies, strengthen capabilities and shape sector thinking, working alongside our clients toward the shared goal of accelerating global economic development.

About Acumen

Acumen is working to change the way the world tackles poverty by investing in companies, leaders, and ideas. Acumen invests patient capital in business models that deliver critical goods and services to the world's poor, improving the lives of millions. Since 2001, Acumen has invested more than \$89 million in 86 companies that provide access to agricultural services, water, health, housing and education to low-income customers in South Asia, East Africa, West Africa and Latin America. Acumen is also working to build a global community of emerging leaders who are equipped to create a more inclusive world through the tools of both business and philanthropy.



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The full report will be available on www.bain.com in November 2014