IBM Institute for Business Value
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Innovating on your own terms

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INNOSIGHT
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IBM Institute for Business Value

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Innosight is a consulting firm focused on helping clients create new growth platforms and improve innovation competencies. It was founded by Harvard Business School Professor Clayton Christensen in 2000. For more information visit innosight.com

APQC

APQC, a global benchmarking and best practice research organization, served as the confidential, third-party benchmarking organization for the Open Innovation Research Study. For more information, visit apqc.org

Innovating on your own terms

By George Pohle and Stephen Wunker

Innovating on your own terms

Why do innovation efforts so often fail? We might expect individual innovations to fail – innovation is risky, after all – but that does not explain why companies often pull the plug on broad campaigns to accelerate innovation, sometimes after only short periods of time. While the business press hectors firms to try to become the next Google, many companies struggle with simply getting innovation initiatives off the ground.

Here's a typical scenario: in the 1980s, Xerox Corporation created an innovation board to enhance its capabilities at commercializing promising technologies. In 1989, this group was replaced with an internal venture capital group called Xerox Technology Ventures. XTV was in turn replaced in the mid-1990s with another unit, Xerox New Enterprise, which was supposed to manage ventures more aggressively and entrepreneurially. Yet XNE was ended in the late 1990s. The company tried structure after structure, yet couldn't become the innovation powerhouse it so wanted to be.[1]

Frequently, companies try to copy outstanding innovators such as Google, but the efforts never catch on, quickly become moribund, and end up engendering cynicism about whether the firm can ever really change.

IBM Global Business Services, Innosight, and APQC's research has shown the fallacy in the assumption that successful innovation will come simply by replicating the approach used by other successful innovators. A survey of 90 companies across multiple industries and 14 countries shows that the sourcing, shaping and implementation of ideas at innovative firms tends to conform to a small number of innovation archetypes, which represent a self-reinforcing combination of culture and operations. Google is representative of one of those archetypes, but only one.

About the Open Innovation Research Study

Recently three organizations, IBM Global Business Services, the innovation consulting firm Innosight, and the benchmarking organization APQC developed an Open Innovation Research Study to better understand how organizations' innovation capabilities impact business performance. The study was conducted by APQC between December 2006 and May 2007. Executives in 90 organizations in multiple industries and 14 countries provided their company's data on innovation metrics and practices. To participate, visit apqc.org/innovationhome.

Products/services metrics

- Revenue growth normalized by R&D spend
- Average time to market for new products/services in days
- Average time to profitability/payback for new products/services in months
- Percentage of revenue from new products and/or services launched in the past year

Operational metrics

- Cost of goods sold as a percentage of revenue
- SG&A as a percentage of revenue
- Average days in inventory
- Percentage product and/or service sales orders delivered on time
- Fixed assets utilization rate

Business model metrics

- Number of new businesses launched in past three years
- Percentage of revenue by fulfillment channels
- Customer retention rate

Innovation enablers

- Employment of cross-functional teams
- Collaboration practices
- Mobilization capabilities (e.g., percentage of employees tasked with innovation goals)
- Innovation agenda (e.g., formal process for fostering and vetting new ideas)
- Customer satisfaction

Because there is no single model of innovation that works for all firms, companies get into trouble by trying to imitate a company that is very much unlike them.

Because there is no single model of innovation that works for all firms, companies get into trouble by trying to imitate a company that is very much unlike them. They try to replicate characteristics that are not "natural" to their own business culture and operating model. Instead, firms should recognize the benefits of the innovation archetype they inhabit, compare their approach to others in their archetype, and borrow very selectively from other categories to fill in targeted gaps in their capabilities. By developing self-reinforcing capabilities that support the existing strengths of the firm, companies stand a much better chance of bolstering their innovativeness.

Understanding archetypes

Firms simply cannot be great along every dimension of their business. A company cannot have both a strong visionary leader driving innovation from the top, and a marketplace of ideas that fuels unpredictable results bubbling up from the bottom. Similarly, firms have difficulty combining deeply-ingrained processes for internal idea development, with plug-and-play models of external partnering to rapidly source and execute new ideas. When firms try to combine these contrasting models of innovation, the result is most often a traffic jam – as people lose their guiding compass.

That compass – culture and the company's operating processes – informs the hundreds of daily decisions and actions that get made without any intervention by senior management. The combination of culture and operations plays a large role in how a company innovates.

Our research indicates that there are a small number of self-reinforcing combinations of cultural and operational factors that companies use to drive innovation. We call these combinations the "archetypes" of innovation and each represents a different approach for making corporate innovation happen. The four archetypes are:

1. The marketplace of ideas

In the marketplace archetype, employees are charged with creating new ideas, shopping them around to gain support, and implementing them rapidly to test feasibility and market acceptance. It is an environment that is somewhat chaotic by design.

Google typifies this model. The company puts great emphasis on hiring bright and creative people, and tells them that up to 20 percent of their time may be spent pursuing personal ideas. While the firm has portfolio guidelines – currently 70 percent of projects focus on core search and advertising, 20 percent on extensions to search such as News, and 10 percent on speculative ideas – there is a highly decentralized system that determines which projects move ahead. Employees create ideas, post them on internal web bulletin boards, and engage in dialogues with others in the company around merits, risks, and near-term action plans.[2]

Innovation and the bottom line

Companies are placing greater emphasis on measuring business performance. In a 2007 Economist Intelligence Unit global poll of 388 executives:

- More than half indicate that emphasis on business performance metrics increased over the past three years.
- Nearly three-quarters say the emphasis on business performance metrics will increase in the next three years.
- Two-thirds agree that non-financial metrics are an important part of their companies' innovation-related activities.

Source: Economist Intelligence Unit, Key trends in performance measurement and benchmarking, 2007, n=388

Firms in this archetype tend to have a relatively short time to market, and they launch new businesses at a much higher rate than those organizations adhering to other innovation models.

Those ideas that generate the most support through this process move into rapid prototyping. Product requirements are kept as simple as possible so that features may evolve as users provide feedback. Early versions are quickly released for internal use, then for Beta release through the website's Google Labs.[3]

We find this model pursued by several other innovative firms, including Best Buy, and innumerable television companies. People are lauded for coming up with ideas, trying them quickly, and learning from experience. Failure is expected and even rewarded, so long as it improves the company's understanding of technology or the marketplace.

Because the marketplace model relies on high quality inputs of ideas, these firms tend to seek opportunities from many sources, including close interactions with clients and partners. Once they vet ideas, firms in this archetype tend to have a relatively short time to market, and they launch new businesses at a much higher rate than those organizations adhering to other innovation models. This speediness is due partly to the companies' preference for validating ideas with real market input rather than detailed upfront analysis.

Common attributes of the market archetype

Leadership

- Executives content with "leading from behind." If executives champion projects too early, they will start to bias the process toward having staff guessing what senior leaders want, rather than letting the marketplace of ideas produce large numbers of winning and losing propositions.

Staff

- Staff recruited for their creativity and passion. If employees don't embrace the marketplace archetype, it is unlikely to generate great results.

Process

- Well-stated goals and boundaries for innovation. Ideation isn't random, but consciously moves the company in a direction that goes beyond extensions of current offerings.
- Ability to trial concepts quickly and at a reasonable expense. Companies are more capable of doing this than they might think. For instance, it may cost hundreds of millions of dollars to build the equipment to produce a new specialty chemical, but small vats of reasonable quality samples can be tested with lead customers at low cost.
- Clear metrics of success and failure, which facilitate the quick trial and assessment of new ideas. One reason television companies can be so innovative is that ratings deliver overnight, irrefutable evidence about a concept's appeal.

Environment

- Environments that allow experimentation. Again, more experimentation is possible than people may perceive. Even in a tightly regulated industry like healthcare, some hospitals try out new procedures all the time. Retailers have powerful brands they need to protect, yet typically run trials on concepts before rolling them out to thousands of locations.

2. The visionary leader

The visionary leader model revolves around a senior executive who understands the future better than customers may, motivates employees to zealously pursue that vision, and keeps generating ideas that are unexpected and profound.

Steve Jobs of Apple is the paragon. His visions have included creating one of the first personal computers, commercializing the Graphical User Interface on the first Macintosh, bringing design to computing with the iMac, and developing the iPod. While the firm has created many innovations, it tends to launch only a few key products at a time, and in fact spends less on R&D than the industry average.[4]

Oftentimes, Apple's big ideas have not started with Jobs. The iPod, for instance, was brought to Jobs as a concept by a little-known product designer named Tony Fadell. Jobs' great talent is the ability to spot high-potential concepts, champion them, and inspire teams to pursue them.[5]

Sometimes the vision is not of an end product or a process, but of a new method of approaching the customer.

Other successful visionaries include Henry Ford, who once famously said, "If I'd asked people what they wanted, they would have asked for a better horse." Ford innovated both in product design and production process, designing unthinkably inexpensive cars produced in a very new manner. Sony's Akio Morita closely observed consumers as they went about their daily lives, and his thinking about how Sony technology could improve their experiences was a leading source of the company's innovations, such as the Walkman.

Sometimes the vision is not of an end product or a process, but of a new method of approaching the customer. Harrah's CEO Gary Loveman, for instance, came to the company from teaching service management at the Harvard Business School. He had a compelling view of how the firm would use intensive data analysis to lead the gaming industry in customer targeting, and he united the organization to pursue that goal with impressive results.

This model goes beyond executive inspiration. These organizations typically construct formal mechanisms through which innovation ideas flow. These mechanisms, from formal processes for collecting customer intelligence to the development of portfolio plans for innovation initiatives, are designed as conduits for operationalizing the ideas of the visionary.

Common attributes of visionary leader archetype

Leadership

- A senior executive who combines deep business insight and creativity, with the ability to motivate employees to pursue a vision that they may not have originally shared.

Staff

- Staff whose satisfaction isn't realized through creating their own great ideas, but who instead are adept at the teamwork necessary to execute leaders' plans.

Process

- Well-understood mechanisms that link executive vision to daily activities, such as portfolio maps and focused strategic plans.

Environment

- Few inter-dependencies with outside parties who could stymie or re-direct the vision.
- A business model that supports the pursuit of just a handful of big initiatives at a time, given that senior visionaries are likely involved in only a small number of projects.

3. Innovation through rigor

Most companies aren't Google or Apple. Their culture, their people and their environments are very different – causing them to take another route to innovation: they create processes designed to produce results systematically.

It is easy to believe that such efforts only generate bureaucracy, endless meetings, and me-too products yielding tepid growth. After all, if companies have similar processes, and similar people, it seems likely they will create similar outputs. However it's possible to use rigor in mold-breaking ways.

Samsung provides one example. Over the past 15 years, the company has set itself apart from fierce competitors through its innovation programs. This vast company creates more products in a year than any visionary could possibly conceive, and it does so within a Korean company culture not historically inclined toward bottom-up idea generation.

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The firm succeeds through a mix of senior executive prioritization and team processes. Samsung's leadership established design as a critical competency back in 1993, and significantly increased the budget to support this new emphasis. It developed Design Centers in London, Los Angeles, San Francisco, Tokyo, and Shanghai to look for emerging customer trends. It created an Innovation Design Lab as an in-house school for promising designers, and it sends these people on internships in industries as diverse as fashion and cosmetics to bring back perspectives that nurture new ways of thinking.[6] The company invests about 10 percent of its revenues in R&D – a very high figure for the industry – and it devotes 15 percent of its R&D team to looking at needs and lifestyles more than 10 years from now. The firm unites its disparate businesses through leveraging a common core of semiconductor components, a field in which it holds a strong worldwide position. Importantly, senior management strives to create a culture of perpetual crisis that forces the company to look seriously at competitive threats and develop new growth businesses.[7]

Samsung helps its employees break down barriers to look at challenges holistically and speedily. For example, over 2,000 people a year cycle through its Value Innovation Program (VIP) Center outside Seoul, where designers, engineers, planners, and programmers gather for days – or months – on end to hammer out detailed specifications for new products. The Center was established to bring together critical team members at the start of a project, dedicated full time to creating the product specification. Members of these cross-functional teams work long days in windowless rooms to shape ideas and resolve their differences, returning to their ordinary jobs only after the task is complete. Fifty "value innovation specialists" facilitate their work. The teams strive to break down stale cultural norms, and encourage junior members to challenge senior staff. Output is rapidly prototyped and tested for usability.

Rigor organizations conceive of innovation in both strategic and tactical terms. Strategically, they pay relatively high levels of attention to the landscape in which the innovation is to take effect. Tactically, they focus on project execution, seeking efficient and fast implementation.

Common attributes of the innovation through rigor archetype

Like other firms including Procter & Gamble and Goldman Sachs, Samsung typifies many essential components of this approach.

Leadership

- Strong executive leadership that sets priorities, thinks differently, raises urgency, and allocates resources appropriately.

Staff

- Staffing policies that dedicate small numbers of empowered employees to problems until they are resolved, and that do not penalize these employees if failure occurs for good reasons.

Process

- Cross-functional approaches that enable issues to be tackled speedily and from multiple reference points.
- Tolerance of dissent, experimentation and iterating toward success.

Environment

- Diffuse product lines impossible for a small set of visionary individuals to dictate and control.

4. Innovation through collaboration

The archetypes explored thus far rely primarily upon internally-generated innovation to create growth. Another archetype is more externally-oriented, featuring companies that team with outside firms to evaluate a wide range of opportunities, rapidly select the ones to trial, and frequently implement the idea through these partners.

Vodafone illustrates the model. The company excels at servicing customers and building a global brand. However its network equipment is supplied by outside firms such as Ericsson, its customers are often acquired by third party dealers such as Carphone Warehouse, and its software applications are sourced from a huge range of third party developers.[8] Vodafone has even partnered with other companies in owning wireless networks, whether in the United States with Verizon or with the Kuwaiti firm MTC operating a Vodafone-branded network in Bahrain.

There is an emphasis in collaboration organizations on developing a common performance vision shared by their partners.

The company excels at understanding a customer need, outlining what it's looking for, seeking the appropriate solution from its vast numbers of partners, performing quick but thorough quality control, and plugging the innovation into its network. If the solution proves off-the-mark, the firm can swap in an alternative relatively easily. Its technology infrastructure facilitates this flexibility, as does its large pipeline of potential opportunities.

Collaboration organizations seek to gather "innovation intelligence" by building formal relationships with other firms that can help them not only shape the innovative concept but, as in the case of Vodafone, actively help to implement the solution. Hence, there is an emphasis by these organizations on developing a common performance vision shared by their partners. They also pay close heed to creating an "innovation culture" that provides the basis for organizational cooperation.

Common attributes of the innovation through collaboration archetype

Leadership

- Humility to outsource key capabilities to other firms.
- Prowess in forming strategic alliances, and in navigating the inevitable conflicts that result.

Staff

- Employees empowered to make deals with outside vendors without multiple layers of approval.

Process

- Competency in finding external collaborators and developing partnerships with them.
- Technology or business infrastructure that enables dynamic reconfiguration.

Environment

- Excellent understanding of customer needs to provide guidance to partners.
- An economic advantage, brand, proprietary channel, or other factors that maintain the firm's differentiation.

Acting on your archetype

By understanding which archetype a firm inhabits, leaders can gain perspective on the actions and investments that are likely to enhance innovativeness and how a near-term action plan can create change. The process involves three steps:

1. Understand your archetype

In order to map where to go, a company needs to understand its starting point. Within its competitive environment, what are the advantages and disadvantages of its current archetype? What does the archetype indicate regarding what the company will excel at versus struggle with?

It is useful to benchmark other firms in your archetype. Once you have thought through what comprises a like-for-like comparison, benchmarking can generate

fruitful ideas for areas of improvement. Unfortunately, many companies either benchmark too widely – trying to compare themselves to fundamentally different firms in other archetypes – or too narrowly by looking only at their competitors and missing approaches that could be borrowed from other industries.

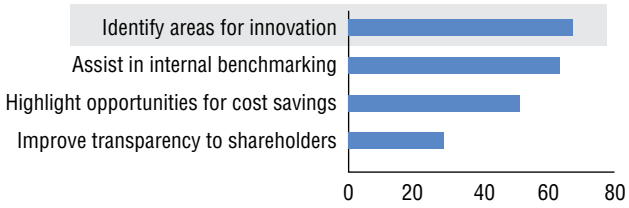
Perhaps the company is attempting to straddle various archetypes, and it is difficult to characterize the firm (or business unit) according to this schema. If so, managers should zero in on traits that seem to cross archetypes, and think carefully about their impact on company culture and decision-making. Do they liberate thinking or create confusion about the individual's or team's role? Do they create passion or cynicism among staff? Do they produce differentiating or me-too results? And most importantly, do they link to – and reinforce – the existing characteristics of the firm?

Open standards benchmarking: Measuring impact of innovation investments

Until now, there have been no globally accepted definitions for business metrics like time to market, or employee turnover, and many others. This made measuring business performance, especially on a broad topic like innovation, difficult if not impossible.

To address this issue, APQC, in collaboration with Procter & Gamble Co.; Shell Oil Co; the U.S. Navy; the World Bank, IBM, and a dozen other leading organizations developed the Open Standards Benchmarking Collaborative℠ in 2004. The OSBC research, which is today used by thousands of organizations, allows organizations in different industries and geographic regions to use the same language to describe comparable processes. Agreement on standard definitions provides companies a way of comparing metrics (and therefore performance) across industries and/or geographic regions. IBM, Innosight and APQC are pursuing further open standards benchmarking of innovation. To become involved in this effort, visit apqc.org/OSBC

What would be the main reason for participating in open standards benchmarking?



Source: Economist Intelligence Unit, Key trends in performance measurement and benchmarking, 2007, n=388.

Crossing archetypes isn't inherently bad. It can shake up entrenched mindsets and differentiate firms from their competition. However, often firms cross categories unintentionally, intending to copy aspects of dissimilar companies and in the process sowing uncertainty among staff about expected behaviors. This creates a disconnection between activities and operational processes. It is a recipe for failure.

For example, many rigor companies deploy idea marketplaces in the hope that a robust community of innovators will emerge to guide the company in unanticipated directions. Often there is an initial burst of enthusiasm as people unleash ideas they have been harboring for some time. But when senior managers begin to ask questions that would require ideas to be much more fleshed-out, and staff in functional silos fail to implement cross-functional ideas, enthusiasm slowly fades away. The initiative fails because the marketplace mechanism does not "fit" with the rigorous processes and cultural norms people have grown accustomed to. Almost subconsciously, they are applying these norms to the ideas coming through this new route.

Through this analysis, managers should attain a deep understanding of cultural strengths and rigidities, and should think through the implications of how new approaches to innovation will inter-relate with the other characteristics of the firm's archetype.

2. Selectively target new approaches

These archetypes are not absolutes. There is no reason why a rigor company cannot have internal idea marketplaces and partner with outside firms, for example. Should it decide to cross over, however, the firm should understand how new initiatives impact the norms that already exist, and how current behaviors and processes must change to accommodate and interlock with the new approaches.

Acting on your archetype

	 *The marketplace of ideas*	 *The visionary leader*	 *Innovation through rigor*	 *Innovation through collaboration*
Organizational participation	This archetype is clearly the most egalitarian of the four, tasking over 90 percent of employees with specific innovation goals. By maintaining the ability to learn from mistakes and make midcourse changes, the innovation process tends to be highly responsive.	Given the leader's role in setting innovation direction, this type has relatively little organizational participation in generating innovation, with less than 13 percent of employees tasked with specific innovation goals.	While organizations in this archetype limit the number of employees formally participating in the innovation process (only 16 percent are so charged), there is nonetheless considerable emphasis on internal processes to create ideas and manage innovation.	While not quite as egalitarian as the marketplace of Ideas archetype (32 percent of employees are tasked with innovation goals), this archetype places a premium on both internal idea generation as well as external partnership.
Intelligence gathering	This archetype, with an emphasis on broad idea generation, often lacks formal mechanisms for gathering customer or competitor intelligence. Instead, these firms emphasize developing structure around the innovation process itself. Often this focus comes at the expense of developing systematic means for collecting information about customer needs or competitor capabilities.	Organizations in this archetype tend to design formal means for gathering data on customer needs and competitor performance. Such information is then used to inform top management who use it to form the innovation agenda. These organizations also tend to construct the tools necessary to gauge internally the success of innovation efforts.	Members of the archetype place strong emphasis on formal information gathering. They have processes in place for gathering customer satisfaction, evaluating innovation efforts across the organization, and piloting innovation projects.	Organizations in this archetype place a premium on performance intelligence. They seek not only information from their customers but also emphasize collaboration with external partners across business functions. By so doing, they align the organization and focus partners.
Implementation	This archetype builds out the internal mechanisms necessary to implement agreed upon implementation strategies. Organizations tend to rely on cross-functional teams, and pilot innovations in a manner that allows them to modify them at essential stages.	The organizations in this archetype tend to be somewhat less concerned with internal mechanisms. On elements such as cross-functional teaming, resource allocation and piloting, they tend to score lower than their marketplace colleagues. Still, when it comes to measuring innovation impact (piloting and course correction) these organizations see themselves as doing quite well. They may follow the lead of the visionary leader but they do so armed with considerable knowledge to make course corrections.	These organizations see themselves as quite competent in implementation, from piloting to course correction. However they lag their marketplace colleagues in their estimated ability to place resources behind innovation efforts, perhaps because they spread their resources too thinly among their many innovation projects.	Organizations in this archetype tend to see themselves as less capable in implementation, which is not surprising given that they often partner to execute results.
Priorities	Members of this archetype tend to have four goals for their innovation efforts: (1) Idea generation; (2) Development and initiation of specific projects – the ability to bring the ideas to life; (3) Building a culture that fosters innovation activity and allows all members of the organization to feel a part of something important; and (4) Developing a better understanding of customer needs in order to align organizational activity with customer expectations.	Members of this archetype are primarily concerned with gaining a better understanding of customer needs. They have an "ear to the ground" in order to inform the corporate vision. Responsiveness in a quick and efficient manner is also an important characteristic for these organizations. Given that many of these firms are in service industries, the emphasis on rapid time to market is unsurprising.	Organizations in this archetype are concerned with customer intelligence. However, they also highly value developing an innovation culture and cultivating the capabilities necessary to execute.	More than any other archetype, organizations using the collaboration model place a tremendous priority on intelligence – especially that pertaining to customer expectations. Since they see innovation as a team activity with selected partners, sharing the need, purpose and form of an innovation project is critical if a sense of shared responsibility and team performance is to be realized.

See Appendix A for a description of the cluster analysis used to reveal the archetypes.

To create the right enabling environment for innovation approaches that cross archetype boundaries, there must be concerted action. Firms may need to set detailed goals and boundaries around the efforts, ensure visibility of these initiatives, train staff, and reward desired behaviors. Leaders need to set appropriate examples, create new processes for idea evaluation, and may even need to set up a separate organization to embody the new culture. The effort must be multi-faceted, as the organizational implications of crossing archetypes can be broad.

For these reasons, innovation initiatives should be focused. Too often, firms set out trying to create a "culture of innovation" on myriad fronts. The challenge is multi-dimensional, to be sure, but when efforts become too diffuse they lack the critical mass to overcome inertia. Managers would be better off by targeting a handful of changes, letting those spread throughout the organization and firmly take root, and then moving on to a next set of challenges.

3. Making it count

When progress goes unmeasured, innovation efforts may lose their momentum. When budgets are tight, it is all too easy to cut initiatives that require uncomfortable behavior and produce uncertain returns. This danger is even more acute when it is hard to say what the efforts have achieved, beyond a map of where projects are in their various stages of development. Therefore, leaders should define from the start of an initiative what "success" entails, and create a balanced set of metrics that track progress.

These measures can encompass the many elements that might be expected in a portfolio plan – resource inputs into innovation efforts, process metrics around cycle time and how frequently ideas are killed, and outputs including opportunity size, risk type, and strategic import. The metrics should be sufficiently small in number, and intuitive, so that managers can keep them in mind as they make day-to-day decisions affecting the process.

Metrics can also assist with diagnosing problems in an apolitical way. Through targeting pain points, managers can then address shortcomings in a focused manner rather than debate whether the whole innovation initiative should be killed or expanded.

Getting started

There is no single formula for successful innovation. Large and small, established and entrepreneurial, companies can accelerate innovation as long as the approach takes focused and relevant steps that are consistent with the existing archetype of its business. Changing your archetype is extremely difficult, and requires many years, whereas improving how you execute within your archetype is comparatively easy.

To get going, identify the characteristics that best represent your company and its innovation archetype. That analysis gives you the degrees of freedom you will have in bolstering or adding new capabilities in your approach to innovation. Then focus your efforts at change in areas where they will really make an impact.

Step by step, real progress can occur, and the ultimate potential is limitless.

What's your archetype?

Find out what innovation archetype your organization matches and how you perform against others.

Participate in the Open Innovation Research Study at no charge and receive your customized in-depth benchmarking report by visiting apqc.org/innovationhome

Appendix A: How the data revealed the archetypes

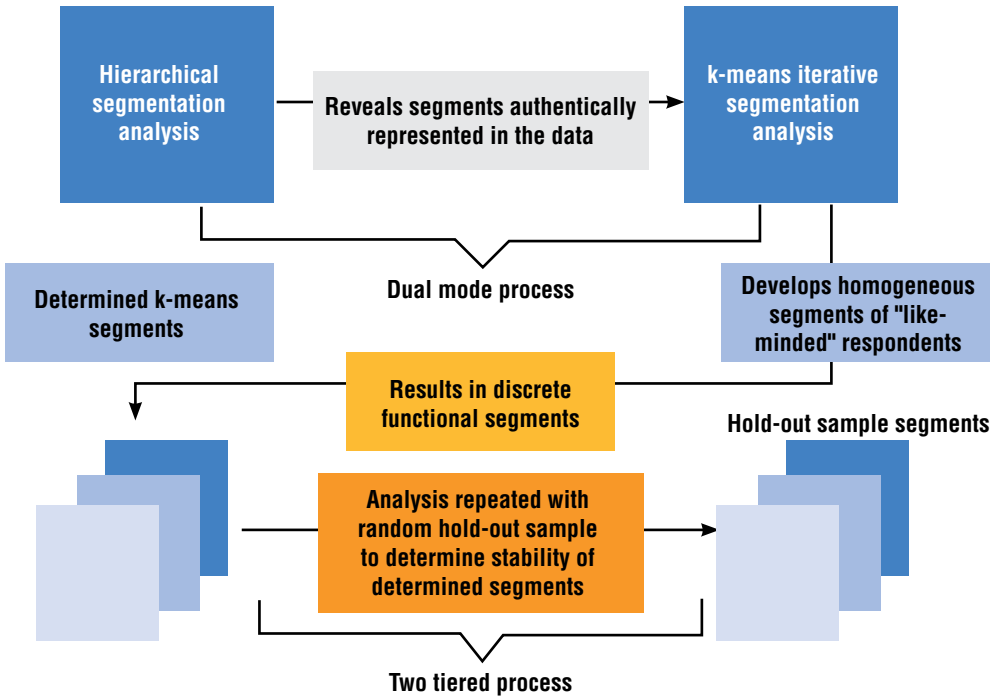
The goal of cluster analysis is to develop a number clusters or groups with members that are highly similar (homogeneous) to one another in their responses to selected survey items while at the same time relatively dissimilar (heterogeneous) from members of the other clusters.

The innovation archetypes were developed using a two-tiered clustering methodology. This methodology employs two different clustering processes – hierarchical and k-means iteration. Non-overlapping hierarchical clustering results in a dendragram representing the hierarchical structure of the companies participating in the Open Innovation Research Study. The tree structure explores the commonality of relationship similar to a taxonomy, only in the case of the Open Innovation Research Study participants the relationship is relative to their responses to the study administered by APQC.

The results of the hierarchical clustering analysis were then used to "inform" the k-means iterative analysis. K-means requires that the analyst provide the anticipated number of clusters before analysis can continue. Since such an indication requires a theoretical imperative, the number of warranted clusters allowable by the response data is first determined using the hierarchical process and the resulting number of clusters are imported into the k-means analysis. The entire dual mode process resulted in the development of four clusters that represent the four innovation archetypes. These archetypes represent participating companies that tend to go about innovation in a similar fashion.

Each of the four innovation archetypes illustrates these properties. They are each characterized by an innovation process philosophy that is distinct from the other archetypes but commonly shared by all archetype members. Even still, there are a set of common activities that vary in emphasis and importance from one archetype to another but are present in all. These activities, such as the gathering of customer intelligence, represent activities essential to successful innovation regardless of performance philosophy.

The dual mode clustering process



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About IBM Global Business Services

With business experts in more than 160 countries, IBM Global Business Services provides clients with deep business process and industry expertise across 17 industries, using innovation to identify, create and deliver value faster. We draw on the full breadth of IBM capabilities, standing behind our advice to help clients implement solutions designed to deliver business outcomes with far-reaching impact and sustainable results.

About Innosight

Through consulting and executive training, Innosight works with clients worldwide to create new sources of growth and enhance approaches to innovation. It applies the thinking of the leading innovation researchers associated with the firm – Clayton Christensen, Richard Foster, and Vijay Govindarajan – and utilizes years of hands-on experience with clients to help firms address challenges of strategy development, idea generation, and commercialization.

About APQC

A global resource for process and performance improvement, APQC discovers improvement methods, identifies benchmarks and best practices, disseminates findings and connects individuals. Spearheaded by APQC, the global Open Standards Benchmarking Collaborative℠ (OSBC) research helps executives benchmark comparable business processes. Founded in 1977, the member-based nonprofit serves more than 500 organizations. For information, visit apqc.org

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