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Perfecting the Recipe for Breakthrough Innovation

David Matheson
SmartOrg

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WHITE PAPER

At Frost & Sullivan's 2011 Growth, Innovation and Leadership conference, 40 executives from a variety of companies like Cisco, Kraft, Medtronic and Eastman Chemicals participated in a workshop to consider ways to create breakthrough innovation in their companies. Together, we analyzed a recipe for breakthrough innovation set forward by HP in a Frost & Sullivan best practice guidebook, Strategic and Economic Value Analysis of Innovative New Business Ideas. We evaluated four key best practice ingredients against our collective experience and determined that these practices would be of value to virtually all the participants.

HP has developed and refined their New Business Development Process over the last ten years, using it to evaluate more than 30 innovations, of which 70% proved to be disruptive, while taking 15 through to launch and achieving initial market success. The process has resulted in creation of such new businesses such as Lightscribe and Retail Photo Services. While these are impressive results, what matters is achieving your goals. Our participant group reflected on their objectives from innovation, for example:

- Over 40% of our revenue over five years comes from new products
- Create proprietary and profitable growth
- Create significant new customer value
- Change my organization's innovation culture

After looking at what was different about each of the key HP practice ingredients vs. typical practices of participants, including what benefits each created, and what the challenges would be to implementation, approximately 80% of the executives concluded that HP's recipe for breakthrough innovation was a good one, in other words, adopting the practice ingredients would help them move towards their innovation goals.

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Like my lifelong quest for the perfect homemade ice cream, perfecting a recipe requires understanding the basic ingredients (cream and sugar) and the variations for different situations (mint chip needs mint and chocolate chips), then testing them against one's experience in actual use (dessert!). In this workshop, we took HP's basic best practice ingredients:

- Support Innovators with an Entrepreneurial Process
- Develop Multiple Strategies for Commercialization
- Craft a Learning Plan Based on Proof Points
- Focus on Uncertainties that Drive the Upside

We tested the ingredients against our collective experience, examined the variations unique to our different situations

and developed a few improvements.

I invite you to consider how this additional depth can help you develop and perfect the recipe for use in your organization.

In the following section, I will take you through the four key best practice ingredients, describe them briefly and provide insight and commentary based on responses from workshop participants.

Best Practice: Support Innovators with an Entrepreneurial Process

It's not a stage-gate. It's not an idea management system. It's a learning-based process designed to support the committed innovator. The steps themselves seem simple enough: Ideate, Formulate, Incubate and Accelerate, but they differ significantly from typical innovation processes.

The **Ideate** phase focuses on the idea champion, a committed innovator who has gathered enough momentum to actually have something of value and can demonstrate his or her intention to make it happen. The ideas themselves come from all over, but the key in this phase is to find the people, anywhere in the organization, who have the desire and conviction to drive something forward.

The emphasis is very different than ideation management systems and typical practices, which assume that ideas are the input to the process. We agree with Google's insight that this assumption is wrong-headed. A more productive approach is to see that ideas are the byproducts of innovators, and focusing on ideas disconnected from the committed innovator is a fools' errand.

The **Formulate** phase explores multiple possibilities for what the innovation could be. Often, best ideas can be taken in many directions and are usually surrounded by lots of uncertainty. This ambiguity tends to undermine confidence in proceeding. Typically, people in most companies simply make assumptions (which few really believe) or choose the most obvious business way forward (which often fails). The Formulate phase explicitly requires the innovator to map out **alternative strategies**; to understand **proof points** and create a **learning plan**; then to map out what is known and unknown about commercial success (uncertainties in market size, price, margins, etc.) and use the **tornado diagrams** (a kind of uncertainty analysis) to focus attention on the big factors that drive economic success.

During the **Incubate** phase the team presents its preferred strategy (and back up plans) to a VP or GM sponsor, who approves phase-based funding for the project. The focus during this phase is on the learning plan; developing evidence and delivering on proof points. The key focus is on learning and adjusting, through demonstration and real evidence, thus going beyond activities required by most stage-gate processes, which tend to focus on planning, budgeting and meeting preset goals. Once it is clear that the team has built an exploitable business asset, they can move to the next phase.

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The **Accelerate** phase covers the zone between product launch and hard-core P&L accountability. During this phase, the project runs as a business with P&L responsibility, but is not subject to brutal big company quarter-to-quarter performance reviews that can kill fledgling businesses. In the Accelerate phase, there are frequently opportunities for significant adjustment and improvement. Once the business

has successfully passed through this "shakedown cruise," the opportunity can move from this transitional phase to into a more traditional business process.

The workshop participants identified benefits created by applying the best practice, including:

- Assures continuity of idea developers from strategy through deployment.
- Enables a total business (cross-functional) perspective throughout.
- Allows ideas to come from anywhere.
- Results in built-in sponsorship checkpoints and alignment on strategy, uncertainty and contingency.
- Provides a learning framework well-suited to new business creation that lets [my company] be responsible about innovation and exploration while recognizing its non-linear nature.

The workshop participants also identified challenges to implementing the best practice

- The learning approach challenges thinking embodied in traditional stage gate and project management. It implicitly assumes that plans are of limited value and is designed around finding the unreasonable upside, not delivering on reasonable expectations.
- (The practice) requires a strong tolerance for failure, restart and discovery. It has to be culturally OK to try one, do it well, and have it fail.
- Finding resources for new businesses that do not exactly fit any current P&L could be very challenging.

Best Practice: Develop Multiple Strategies for Commercialization

Most innovative ideas can be developed in multiple ways. Yet this very flexibility often undermines the credibility of the best ideas because it makes them seem ambiguous. People often select the first available strategy, or pick the one that is closest to the current business. This strategy usually fails and the idea ends up in the junk heap.

A better approach is to create maneuvering room by identifying alternative strategies, “from mild to wild”, and pursuing one with several backup strategies. The benefit of this approach is that if the first strategy hits a speed bump, there is space for correction and adjustment.

Often, innovation teams fail to develop full strategies for commercialization.

Rather, different people advocate different strategic fragments. For instance, the marketing person may want to do what is best for marketing, the engineering person best for engineering etc. What is best for each function is seldom a good way to develop a viable business.

By brainstorming and evaluating commercialization strategy options you can address these issues and help teams open up their thinking, get alignment on what they are planning, say “no” to things they are not going to do, and find better ways of developing an opportunity.

A quick example from the launch of Lightscribe®, a DVD label writer that uses the existing laser in a DVD burner to write DVD labels. The innovation was first conceived in the early 2000s. Since HP made PCs, an obvious strategy would have been to make Lightscribe a feature in HP computers. However, because HP was not in the optical disc drive business, this approach would have resulted in a significant investment for HP to develop or acquire this capability.

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Another strategy would have been to license the technology. This was certainly a cheaper approach, but had smaller revenue potential. It also would have put the technology into the hands of competitors, and HP would lose control of branding and quality.

These two alternatives require decisions to be made around a number of key areas, like branding (HP or none); product scope (HP only or on any computer); HP contribution (IP or create new optical disc drive), and other factors that could inhibit the success of either strategy.

During a workshop, the team brainstormed to consider additional strategies. They identified a “Drive Consumer Standard” technology, based on building a consortium to drive a consumer brand, which ultimately proved to be the right strategy.

The workshop participants identified benefits created by applying the best practice, including:

- Removes blinders and assumptions; opens up thinking and drives people to more impactful innovation.
- Reduces conflict by bringing people together in a kind of structured brainstorming. “You can explore everyone’s strategic idea easily.”
- Increases alignment – what you say “yes” to and what you say “no” to become clearer.
- Visual format increases communication and effective conversations.
- Gets us out of “putting all our eggs in one basket”.

The workshop participants also identified challenges to implementing the best practice:

- Need to get a good cross-functional diverse group together to think through the strategies, ideally led by a good facilitator.
- A culture change, shifting from advocating my preferred direction to exploring how to best develop an idea.

Best Practice: Craft a Learning Plan Based on Proof Points

This practice makes a subtle yet critical distinction between work and evidence. Most project plans are focused on work; successful innovation is focused on evidence – delivering proof that the idea will be successful.

For example, consider HP's risk assessment for a project like Lightscribe. A key issue is the development of the supply chain—a huge amount of work. There is a lot of risk in that the project could easily go over budget or schedule due to issues with setting up the supply chain. It would be tempting to focus a lot of attention on supply chain development. However, that would be a huge mistake, since HP is among the best companies on the planet when it comes to setting up a complex supply chain; their ability to successfully develop a supply chain does not need to be proven.

What do need to be proven are the core strategic assumptions. For the “Drive Consumer Standard” strategy, these fall into three basic categories: Does the technology work? Can we form a consortium? Can the consortium drive mass market adoption as a standard?

The first step is to identify proof points. To do this, ask yourself a simple question: If you had to mortgage your house to invest in this opportunity, what would you want to see demonstrated before you would be willing to write the check?

Our participants noted that such a critical question is rarely asked, and that in their organizations the focus is usually on the tasks and work to the detriment of learning.

The second step is to develop metrics for each proof point: How would you really know if you had accomplished it? What is the actual evidence you have to gather? For the “Does the technology work” proof point, having a working prototype would provide a good demonstration.

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The third step is to quantify each proof point in terms of its difficulty. What is the probability of delivering this evidence? In the Lightscribe case, probabilities range from 70% for developing the working prototype to 10% for attracting a critical mass of consortium partners to commit IP and resources.

If you plot proof points against time and investment, you frequently find that teams are trying to get a “quick win” by working on the easiest proof point first. At HP and other engineering companies, building a prototype provides really interesting challenges and it falls within the staff's natural comfort zone.

This leaves the more difficult proof—getting a critical mass of consortium partners—for later. With a 10% chance of success, the project will most likely fail at this point, AFTER significant time and resources have been spent on a now useless prototype. This is a very risky business proposition.

To maximize the rate of learning, the team needs to reverse the proof points, and work on the most uncomfortable task first, i.e., developing the consortium. If this fails, they will have learned rapidly and can fall back to plan B. On the other hand, if it succeeds, they can proceed with the prototype, knowing that increased investment is largely “de-risked.”

The workshop participants identified benefits created by applying this best practice ingredient, including:

- Alignment around and focus on what really matters to make the innovation a success.
- We can take more shots on goal because early failure is inexpensive and we can learn rapidly.
- Increasing probability of ultimate success by being clear about underlying assumptions and clearing up biases that blind us to seeing what is really required.

The workshop participants also identified challenges to implementing the best practice

- Need to adopt a “learning view of innovation” instead of a “deliver this project view of innovation,” which is common in most product development organizations.
- Making failure explicit can be challenging for people.
- Crafting good proof points and metrics takes some skill – it is easier to list “risks” and mitigation plans, this best practice requires us to think more powerfully.

Best Practice: Focus on Uncertainties that Drive the Upside

Companies’ innovation goals always have an economic dimension—create new proprietary growth, drive revenue, increase margins, etc. Yet when evaluating an opportunity, the most common approach to understanding the economic impact—a business case—often reduces a team’s ability to deliver desired returns.

The reason? Business cases are often based on assumptions, which are entered into a spreadsheet and used to calculate results that no one really believes. People then argue about the assumptions. Typically, the team is beaten back to more “realistic” or “conservative” assumptions, reducing the value of the business proposition. Real danger occurs when these modest goals become aspirations, because the key to creating new wealth through innovation is to find out how to drive toward the “unreasonable upside.” The unintended consequence of the business case is that people are driven to aspire to mediocrity.

Another mistake people make is to act as though the assumptions are real, and from this position move to a discussion of risk. They create lists of things that could go wrong, create mitigating steps, and so on. Anything that is a fear is

added to the pile and becomes a negative factor affecting the project. Although thinking carefully about how to prevent the downside is important, focusing on risk wastes a lot of time and attention paid to the wrong things.

The key to success is to maximize the time and attention on the upside possibility, which, oddly, is rarely discussed seriously. To use a sports analogy: if you are taking a shot on goal, the last thing you want to do is think about everything that can go wrong; rather, you need to visualize everything coming together to put the ball over the goal line.

The typical business case approach is the wrong way to go about evaluating innovation, for figuring out how to drive upside value, and for determining what you need to focus on to deliver successful results.

This best practice focuses attention on the factors that matter, inspires teams to drive towards improving the upside of the opportunity and reveals where where a mistake could undermine economic performance.

The starting point is to move away from “reasonable assumption-based thinking,” which tends to limit innovation. For each important factor

in the business case (like market share, market size, price, etc.), you need to discuss each factor that drives its high and low values. The goal is to develop objective evidence about what is known and not known in order to develop a range of uncertainty around high and low value.

When the ranges of uncertainty around each factor have been entered into an economic model an uncertainty analysis will reveal, through a tornado diagram, that some uncertainties have a much higher impact on value than others. This enables you to focus on factors that really matter.

**The key to success is to maximize the time
and attention on the upside possibility.**

As you learn more, update the ranges of uncertainty and repeat the analysis, enabling you to retain focus on the most important factors as the future unfolds.

For example, in the Lightscribe case, the HP project team was very concerned about the Bill of Material cost of the Lightscribe drive because their estimates had a +/- 10% range of uncertainty. Yet when they looked systematically across all the factors driving their economics, they realized that the big swing in their business was driving by the utilization rate—how many discs to people burn? At the time in history when people were sharing albums by burning CDs and given them to friends and all reports showed this behavior on the rise, it was a rare insight to realize that the Internet and MP3 players could change their business. Not that you can drop the ball on costs, but HP put far more attention into this critical issue of how people use CDs and DVDs.

The workshop participants identified benefits created by applying the best practice, including:

- Makes assumptions explicit so they can be discussed and tested.
- Tornado diagram visualization of uncertainty drives the right discussions.
- Resolves conflict objectively.
- Sets the right expectations for financial returns from innovation.
- Increases the chances of hitting a home run.

The workshop participants also identified challenges to implementing the best practice

- People need to get comfortable with developing ranges of uncertainty.
- If you've got a range of uncertainty, managers can no longer "hold people accountable" to delivering specific financial results, and will tend to think more carefully about drawing on the right metrics for innovation.

Conclusion

My mother has a recipe for homemade mint-chip ice cream that I've inherited (along with an old wooden tub of an ice cream maker that produces delicious results). I have added to the recipe, using less sugar and darker chocolate.

Like ice cream's basic ingredients of sugar and cream, our executive workshop affirmed the basic best practice ingredients for breakthrough innovation:

- Support Innovators with an Entrepreneurial Process
- Develop Multiple Strategies for Commercialization
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These best practices have helped HP; they helped our workshop participants and they can help you. Add to the recipe, make it your own, and make it fit your goals and tastes.

When evaluating an opportunity, the most common approach to understanding the economic impact—a business case—often reduces a team's ability to deliver desired returns.

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SMARTORG[®]

855 Oak Grove Avenue, Suite 202
Menlo Park, CA 94025

T: +1.650.470.0120 | F: +1.650.328.1612
info@smartorg.com | www.smartorg.com

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