PDC PRODUCT DEVELOPMENT CONSULTING, INC.

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Left, Right, or Center?

Applying the Correct "Brain" to Innovation

> "Solving problems is a practical skill like… swimming. We acquire any practical skill by imitating and practice."
> -- G. Polya, *How to Solve It*, Princeton University Press, New Jersey, 1945
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> "You need a compass. Our compass is the user experience."
> *-- Steelcase CEO James Hackett, quoted in a recent BusinessWeek article*

Pendulums swing in business as elsewhere. Years of celebrating processes (especially those of Japanese manufacturing) in the 1980s paved the way to worship of quality and then to the supremacy of the customer. Now, it seems, business is all about creativity -- unleashing your inner innovator and turning tradition on its head. Books about new minds, flat worlds, and the power of thinking without thinking are all the rage.

But this new infatuation with creativity shouldn't mean rushing blindly to pursue new concepts simply because they're innovative. The word *innovative* may conjure images of eccentric scientists toiling in dusty laboratories or inventors cobbling together Rube Goldberg-esque contraptions. It's true that innovators excel at seeing things in new ways and coming up with previously unimagined solutions. But unconstrained inspiration doesn't serve companies looking to harness the power of innovation to create successful products.

We believe, as the influential business thinker Peter Drucker puts it, that innovation is "the means by which you exploit change as an opportunity for a different business or a different service. It is capable of being presented as a discipline, capable of being learned, capable of being practiced." (*Innovation and Entrepreneurship: Practice and Principles*, HarperCollins, New York, 1985). The initial spark of an idea may -- and indeed often must -- arise from unconstrained thinking, but the process of innovation can be learned, integrated into a company, and used to deliver solutions that eliminate problems and change how people behave. Unless you are creating products and services for the pure esthetic joy of it, you will want those products and services to have economic value to the customer. The way to ensure that products have economic value is to solve a customer problem.

Read on to find out about the elements of a measurable, quantifiable innovation process that can be documented, repeated, and placed in the service of solving customer problems.

Innovation as Solution

If you conceive of innovation as solving customer problems, then you can begin to take steps to transform the innovation process from art to science. While artistic beauty may be in the eye of the beholder, science operates on methodology, not intuition. An innovation is only worth as much as the customer is willing to pay. Only with absolute clarity about the value customers place on solutions can you make innovation decisions that keep the product portfolio relevant. You start with finding the opportunities through customer value work, then innovate in those areas that match your strategic value.

After the right-brained work of imagining a new world or a new way of doing something, you need to apply some left-brained constraints. We see four elements in the innovation process: *understand*, *plan*, *execute*, and *evaluate*. To introduce an innovation to the marketplace, you combine these elements and bring in multiple perspectives (customer, industry, related markets, technology) that help you discern the shortest path between the idea and its realization as a product.

The steps below can form the basis for a measurable methodology of innovation and greatly increase your firm's ability to successfully innovate. You can still cultivate the wild ideas, but now you will have a way to evaluate them in light of how valuable they will be to customers.

1. Get (and Understand) the (Customer) Data
2. Validate the Data
3. Identify the Potential Constraints
4. Find Some Partners
5. Make the Investment
6. Innovate!

A Data-Based Approach

Bad things happen when good people operate without data. In the most extreme cases, companies without the right data may pursue innovations that don't fit their strategy or market space. In other cases, lack of data can lead to the sudden termination of projects that have eaten through far more than their allotted budgets or to management's unwillingness to kill a failing project that has acquired its own momentum. These actions result either from lack of clarity about strategic or portfolio direction or from *lack of data*.

Data is critical to 1) make decisions about balancing priorities; 2) evaluate time and budget tradeoffs; 3) respond to market changes; or 4) accurately articulate the customer problem. What kind of data do you need? Not, we believe, more financial data. Instead, you need evidence of customer needs. Customer data gathering is where the art and science of innovation meet. The typical processes used to gather customer data don't always capture unspoken or as-yet-unknown needs (sometimes called latent needs). Yet it is precisely in the area of unarticulated needs where innovation will be most fruitful. When you choose a research method that enables potential customers to clearly describe problems, paint a picture of the world in which they live or work, and articulate (tell a story about) why the problems are so painful, *you will have a chance to introduce a customer value innovation*. Your understanding of where the problem lives and how it prevents customers from being successful feeds the innovation process.

Great results can come from applying so-called right-brained activities such as storytelling and brainstorming in the service of left-brained undertakings such as data gathering and analysis. Successful innovation programs require both halves of the brain. Favoring one approach to the exclusion of the other greatly diminishes the potential of your innovation efforts.

A scientific approach to problem-solving requires validation: proof that the problem as you have defined it is real and worth solving. You can achieve this in any number of ways: through scientific methods that provide statistical levels of confidence, by bringing together experts to explain the significance of the problem, or by creating a prototype of the product or service to help clarify conclusions from the data. No

matter how you go about it, validation ensures that the road you're about to travel actually leads where you want to go.

What Stands in the Way

In the mythology of the hero's journey, once the hero is called to a course of action, the obstacles arise. This can happen in a company's pursuit of an innovative solution, too. Suddenly, there doesn't seem to be enough money or time. The reality of meeting challenges can dampen enthusiasm. Once you identify and validate the customer problem, you must examine the potential constraints (both internal and external) on your company's ability to provide a solution. External constraints come in many forms and vary across industries and countries. They might consist of the hurdle of FDA approval for drugs after clinical trials, government-mandated health and safety regulations, or caps on electronic emissions.

Internal constraints -- such as whether the company possesses the right skills and resources to create a solution -- often can be more challenging to identify and overcome than external ones. While budget and schedule limitations may be readily apparent, lack of skills and abilities may not be. Employees may possess theoretical knowledge of a subject but be unable to apply it practically. This resource deficit or lack of mapping to a core competency may not become evident until well into the development process. Other constraints include technical or market risk, product or service costs, capital costs, and risks in manufacturing or parts sourcing.

Often, the most valuable outcome of a constraint audit is a determination of what the company *cannot* do. Recognizing limitations is not a reason to come to a hard

stop or to kill an innovation project. Instead, it provides an opportunity for the firm to focus on its core competencies and engage partners to help fill in the gaps.

Allocate the Assets

A recent study by Ernst & Young found that executives at technology companies feel they lack effective processes to select and manage investments in innovation. Further, they identify investment in innovation as the most critical competitive factor, not just as a component of success but also as its driver. These issues, while particularly evident in fast-paced technology companies, exist in all industries.

A number of forces can stymie investment decision making: the competing interests of short-term versus long-term investment horizons, the attractiveness of an opportunity versus the risk of pursuing it, and the need for open-ended creativity versus financial control (or, more simplistically: a conflict between left-brain and right-brain approaches.) The best approaches to innovation seek to balance these forces.

Okay, Now Go Ahead and Innovate!

With a framework in place for evaluating innovation in the context of economic value to the customer, the designers, scientists, engineers, and programmers who love to create, fiddle, play, and tinker are free to work. You have the peace of mind that comes from knowing that you can vet any potential innovation according to sound principles. You can relax as the left brain and right brain work together for the maximum benefit of your company's product development activities.

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Find out more about PDC's new book, *Value Innovation Portfolio Management: Achieving Double-Digit Growth Through Customer Value*

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LINKS

A Whole New Mind: Why Right-Brainers Will Rule the Future, by Daniel Pink (2006)

Blink: The Power of Thinking Without Thinking, by Malcolm Gladwell (2005)

The World Is Flat: A Brief History of the Twenty-first Century, by Thomas Friedman, (2006)