How to translate new product development to market success?

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University of Groningen, The Netherlands

Ljubljana, November 15, 2011
Innovation: Sustainability is key to success

Innovation is crucial to ABB’s success in our markets, and to meeting customer needs while lowering environmental impact. We continuously seek to further strengthen and expand our product portfolio, creating the technologies, products and solutions that will improve the productivity, efficiency and flexibility of our customers’ operations.

imagination = innovation

We’re determined to solve the world’s biggest problems. By putting our collective imagination to work for a better future, we might get there yet. Is it possible to change the world? At GE, we are doing it one idea at a time.

Innovation

An impressive innovation track record

Innovation at DSM is not just about great ideas, state-of-the-art technology and high-tech laboratories. It’s about finding the best sustainable and commercially viable solutions to market needs.
How do you develop and launch a $3 million RV camper?
How do you develop a new phone that is fully covered by touchscreen?
How do you develop a new imaging system for hospitals?
Whether you are developing a new fast moving consumer good…
…or a complex B2B product

The innovation process (i.e. the road to success) is the same!
The road to success may not be as straight as it looks, with lots of dangerous curves ahead, but a detailed roadmap exists...
The Stage-Gate Model depicts the ideal innovation process and guides the way to success

- series of activities
- go/no go decisions
- in practice not always this linear

“Using the analogy of North American football, Stage-Gate is the playbook that the team uses to drive the ball down the field to a touchdown; the stages are the plays, and the gates are the huddles.”

- Robert Cooper (2009)
strategic planning

technology scanning
customer visits

idea generation

project definition

defining the scope of the project, formulating first plan

(Several weeks)

technical assessment

small experiments, developing partner network, identifying required resources, impact on organization

(3-4 months)

detailed research

research technical feasibility, defining project and value for company, planning use of results

(several years?)

NPD process

process development

JV, licences

Screen 1
strategic fit?
likelihood of technical success?
likelihood of commercial success?

Screen 2
is the idea good enough for small experiments?

Screen 3
comparable with screen 2, but more critical questions

Screen 4
suitable for a defined project?
But firms don’t have to do everything themselves!
The most logical innovation partner: your customer! After all, the customer knows what he wants... But which customer?
Which customers are best suited to contribute to your innovation process?

Answer 1: Lead users!

“Lead users face needs that will be general in a marketplace – but face them months or years before the bulk of that marketplace encounters them, and lead users are positioned to benefit significantly by obtaining a solution to those needs.”

- Eric von Hippel (1986)
Customers may generate ideas for new products, but this varies across industries

<table>
<thead>
<tr>
<th>Type of innovation</th>
<th>User</th>
<th>Producer</th>
<th>Supplier</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific instruments</td>
<td>77%</td>
<td>23%</td>
<td>0%</td>
<td>17%</td>
</tr>
<tr>
<td>Semiconductor and printboards</td>
<td>67</td>
<td>21</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Pultrusion processes</td>
<td>90</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Tractor shovels</td>
<td>6</td>
<td>94</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Engineering plastics</td>
<td>10</td>
<td>90</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Plastics additives</td>
<td>10</td>
<td>92</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Industrial gas</td>
<td>42</td>
<td>17</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Thermoplastics</td>
<td>43</td>
<td>14</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Wire termination equipment</td>
<td>11</td>
<td>33</td>
<td>56</td>
<td>0</td>
</tr>
</tbody>
</table>

Von Hippel (1978)
Equipment for extreme sports is often developed by enthusiastic users.

New medical equipment is invented by innovative physicians.

Tim Berners-Lee invented the World Wide Web because he needed it.
SAGA 100% ORGANIC COTTON
A thin, airy and slightly elastic shirt. Fits just as well on the job as the mountain tour.

MITHRIL KEVLAR JACKET
Kevlar-reinforced fluorocarbon free softshell jacket, winner of the Outdoor Industry Gold Award 2011!

HUGIN LIGHTWEIGHT PACK - 0.95 kg
With a sturdy and torsion-rigid back construction and shaped, adjustable shoulder straps. 60 litres.
“In the very early stages of the innovation process, lead users receive valuable feedback on the overall potential of their ideas as well as concrete development contributions from a micro-community that forms around the idea.”

- Hienerth & Lettl (2011)
Give innovative customers their own toolkits and let them experiment!

“[P]roduct development is often difficult because the "need" information (what the customer wants) resides with the customer, and the "solution" information (how to satisfy those needs) lies with the manufacturer. Traditionally, the onus has been on manufacturers to collect the need information through various means, including market research and information gathered from the field. The process can be costly and time-consuming because customer needs are often complex, subtle, and fast changing. Frequently, customers don't fully understand their needs until they try out prototypes to explore exactly what does, and doesn't, work (referred to as "learning by doing"). ... [A] number of companies have ... abandoned their efforts to understand exactly what products their customers want and have instead equipped them with tools to design and develop their own products, ranging from minor modifications to major new innovations. The user-friendly tools, often integrated into a package we call a "tool kit for customer innovation," deploy new technologies like computer simulation and rapid prototyping to make product development faster and less expensive.”

Lead users may be different from ‘regular’ users. Even when an enthusiastic user has developed a prototype that works, you still need to:

- identify potential users
- investigate needs and wants of regular users
- assess the size of the potential market
- analyze the competition
- evaluate investments and risks
- evaluate product fit with existing products
- test product concept with representative group of regular users
Which customers are best suited to contribute to your innovation process?

Answer 2: Depends on the innovation stage
After three years of delays, Boeing delivered the first 787 (Dreamliner) to All Nippon Airlines
- first commercial flight in November 2011
- total costs of the 787 program: $32 billion; no profits before 2020 ("if at all"
- United Airlines will get the first 787 in North America, 8 years after it was ordered...
Which customers are best suited to contribute to your innovation process?

Answer 3: Key customers in the value chain
Hydro (a Norwegian global supplier of aluminium), worked with Nicholl (a UK-based packaging firm) to develop a new generation of smooth-walled aluminium trays for customer Marks & Spencer so that the consumer can keep food products fresh for longer periods.

“We form aluminium into smooth-walled trays for keeping food in. We’re good at that. But we don’t know as much about aluminium as Hydro. We are therefore working closely together. … Our new smooth-walled aluminium trays are unique. They became an overnight success and have created a completely new market. Marks & Spencer took chicken out of plastic containers and into aluminium trays about four-five years ago. We couldn’t have supplied this product, with its unique properties, without the right aluminium alloy.”

- Nicholl’s managing director Andrew Dent
1. What type of customers should we cooperate with?
   Which level of the value chain?
   Direct vs downstream customers

2. Which customers at that level are most appropriate to cooperate with?
   The largest customers?
   The customers with the biggest problems?
   The most willing customers?
   The no. 2 customer (who wants to become no. 1)?

3. How do we interact with them?
   Do we already have existing relationships?
   Which individuals should we approach?
   How do we communicate with them?
# Methods for Capturing the Voice of the Customer

<table>
<thead>
<tr>
<th>Method</th>
<th>Strength</th>
<th>Weakness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviews</td>
<td>One on One</td>
<td>Sample Size &amp; Cost</td>
</tr>
<tr>
<td>Survey</td>
<td>Reach many Customers</td>
<td>Low Response Rate</td>
</tr>
<tr>
<td>Focus Groups</td>
<td>One on Few</td>
<td>Group Think</td>
</tr>
<tr>
<td>Quality Function Deployment</td>
<td>Identification, Prioritization &amp; Implementation</td>
<td>Leadership Buy In</td>
</tr>
<tr>
<td>Empathic Design</td>
<td>Observation of Current Products</td>
<td>May Not Lead to New Products</td>
</tr>
<tr>
<td>Lead Users</td>
<td>Leaders in Knowledge of Future Products</td>
<td>Available Resources for Deployment</td>
</tr>
</tbody>
</table>
Which customers are best suited to contribute to your innovation process?

Answer 4: You shouldn’t rely on customers

Research shows that:
Customers don’t know what they want
Customers can’t tell you what they want
Customers won’t tell you want they want

“People will say they want sodium-free or low-carb foods. Then they leave the focus group and go to McDonald’s and supersize everything.”

- Vince Melchiorre, Senior Vice President Tasty Baking
Marketers make three critical mistakes:

1. They collect a lot of factual information (customers prefer X) instead of explanations why customers behave the way they do.
2. They think that they understand customers because they have collected a huge amount of customer data.
3. They focus on only a limited part of the customer experience (functional features instead of emotions).

“At least 95% of all cognition occurs below awareness in the shadows of the mind.”
What the customer thought he wanted...

What the customer really wants!
Firms collaborate with different types of partners, each with its own type of contribution.
The Engine Alliance: 50/50 partnership between GE and Pratt & Whitney developed the engines

numerous suppliers developed and supplied components and systems: Goodrich, Triumph Composite Systems, Synopsys, Assystem, Suez, Alcoa, Saab, Thales Avionics, Rolls-Royce

Airbus set up a supplier support interface as the sole point of contact between A380 customers and the 13 hardware and software suppliers participating in the Integrated Modular Avionics platform (manages access to information, software updates and spare parts)

Lufthansa: tested the A380 performance under realistic conditions in March 2007; route-proving partner

Singapore Airlines: first commercial flight from Singapore to Sidney in October 2007; launch customer
The value-creating network organization

Biemans (2010)
- What type of partners?
- Partner contributions?
- Selection criteria for partners?
- Individuals to approach?
- Preferred interaction/communication modes?
- Management challenges and solutions?
“Together, we can create more value than we ever could alone. Whether you have a world-class innovation to share or a sizable business that is interested in accessing P&G's innovation assets, we want to be your partner of choice.”

- www.pg.com
Welcome To InnoCentive
Where the World Innovates

Are you looking to solve problems and accelerate your innovation capability?
Drive Innovation »

Are you passionate about solving important problems that really matter?
Become A Solver »

Open Challenges
Show: Featured Challenges
There are 115 active challenges | View All »

Medical Device Market Access Models for India
Deadline: 10/27/2011 | 180 active solvers | Referral award: $1,000 USD
$10,000 USD

Cleveland Clinic: Build an Efficient Pipeline to Find the Most Powerful Predictors
Deadline: 12/06/2011 | 544 active solvers | Referral award: $3,000 USD
$30,000 USD

Increasing People’s Ability to Start and Stay on Task
Deadline: 10/16/2011 | 815 active solvers | Referral award: $1,000 USD
$10,000 USD

Special Operations Transport
Deadline: 11/14/2011 | 781 active solvers | Referral award: $2,500 USD
$25,000 USD

InnoCentive Introduces Significant Enhancements to Prodigy for Analytical Challenges
Prodigy allows InnoCentive Solvers working on analytical Challenges to obtain instant feedback on the accuracy of their solutions relative to solutions submitted from other Solvers. Find out how Cleveland Clinic is using this functionality to more quickly analyze genes that predict cancer survival.

Read more

The Latest
Medical Device Market Access Models for India

TAGS: Developing Countries, Engineering/Design, The Economist, Business/Entrepreneurship, Global Health, Life Sciences, Ideation

AWARD: $10,000 USD | DEADLINE: 10/27/11 | ACTIVE SOLVERS: 180 | POSTED: 9/27/11

How can commercial medical devices be made available to large segments of the rural population in India? The Seeker is looking for business models based on proven examples that will enable high-value technologies to be marketed to both low- and mid-income Indian individuals and communities. The scope of the challenge is broad and a wide range of strategies are welcomed.

This is an Ideation Challenge with a guaranteed award for at least one submitted solution.

Source: InnoCentive  Challenge ID: 9932660

Challenge Overview

Although many people living in industrialized areas of India are experiencing increases in quality of life & life expectancy, the bulk of the Indian population remain in rural areas and are still unable to access high-quality medical care and devices. It is important to note that these communities are the ones most in need of medical devices that will help to monitor and manage diseases.

While the clear goal is to identify existing business models that have been applied to "medical" products (pharmaceuticals, diagnostics, medical devices, etc) in order to allow them to meet the unique and challenging financial conditions for rural India, examples from outside the medical field are welcome, as long as they have the potential to be applied to medical products. More details are available in the detailed challenge description.

The Seeker requires coherent descriptions of proven models (e.g., models which have demonstrated commercial success) used to access low and middle income consumers in that could be applied to medical devices in India. Business models which have been applied to products outside the medical field, but for which the solver could describe a specific embodiment related to a medical product, are welcome as well.
For Corporations

Solve Problems Faster, Better, and with Less Risk

Research and development, innovation, and product development executives face daunting challenges: Diminishing productivity, lower return on R&D investments, longer innovation cycles, slower time-to-market, and budget cuts. The list goes on, but the general operating procedure today is ‘do more with less.’

What if there was a better way to solve key problems you face today and also build a systematic innovation capability to transform how your company innovates in the future?

InnoCentive has the solution, which we call Challenge Driven Innovation.

Our Open Innovation and Crowdsourcing platform solves the most difficult business and technical problems facing global corporations.

We deliver breakthrough ideas and solutions at lower cost, in shorter time, and with less risk than previously possible.

Our communities of problem solvers reach into the millions through our direct community, syndication partners, and social media.

We enable access to diverse, global talent both inside and outside of organizations.

And, our clients pay only for results – a fundamental change in the economics of innovation.

Interested in real-world examples of Open Innovation in practice?
Click here to visit our Resource Center for white papers, case studies, and Challenge solutions.
Developing an exciting, innovative product is just half of the work/fun

Market success strongly depends on an effective market launch
• Don’t sell to just any paying customer!
• Formulate a market penetration strategy
• Prioritize market segments
• Conquer market segments sequentially
• Stick to your plans! Dare to say NO to a potential customer!
What does this mean for your company?

Always use a systematic approach to innovation

Make sure that your employees have the required attitude and skills

Stimulate frequent interaction and open communication (both with partners and inside your company)

Put yourself in the customer’s shoes, but don’t always trust the customer

Combine customer understanding with internal capabilities
A final thought:

Innovation is not a science, dare to experiment, dare to fail!

“If you’re not failing every now and again, it’s a sign you’re not doing anything very innovative.”

- Woody Allen