White Paper

Improving Innovation Productivity in the Consumer Packaged Goods Industry

Authors

Joel Barbier
Mary de Wysocki
Steve Du Mont
Sharon Finke
Shaun Kirby
James Macaulay
Mike McLaughlin
Waseem Sheikh
Jon Stine
Ronald van Zanten

Cisco Internet Business Solutions Group (IBSG)

Overview

Successful innovation is critically important to the consumer packaged goods (CPG) industry and will largely define winners and losers. The rapidly growing phenomenon of Internet-based, interactive, collaborative communication has created an opportunity for the CPG industry to shift from a traditional, linear process to one that creates a virtualized innovation process that originates from, and centers on, the consumer.

At present, the innovation process for the CPG industry is driven mainly by existing business models: internal research and development, contemporary industry HR practices, and internal IT capabilities. The inability to challenge and change existing, traditional processes and cultural values leads to seriously inert organizations. These organizations currently are obtaining unacceptable results from innovation.

Today's consumer-centric world requires businesses to reassess innovation initiatives, balancing investment across technology, process, and cultural change. Going forward, significantly higher rates of success will be found through the implementation of an Innovation Execution Framework, which consists of three elements:

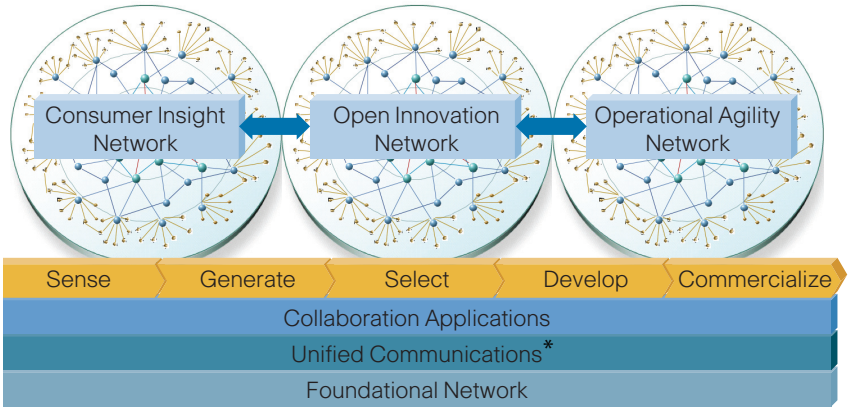
- **Consumer Insight Network:** Internet-based social network that encourages and enables consumer-originated, interactive content devoted to issues relevant to CPG brand categories.
- **Open Innovation Network:** An open-source, Internet-based, social network that encourages and enables interaction aimed at developing ideas, solving problems, or formulating disruption opportunities.
- **Operational Agility Network:** Internet-based, collaborative network that overlaps and loops through the other networks to add knowledge and improve responsiveness.

Innovation Through Collaboration

Innovation can be accelerated only if an organization is able to implement multi-dimensional mass collaboration. This means simultaneous downstream collaboration with retailers and customers, upstream collaboration with vendors, horizontal collaboration internally, and collaboration with other ecosystem partners and outside communities of common interest, including freelance experts and academicians.

In order to change the outcome, the industry needs to transform its approach by including Web 2.0 technologies and processes that achieve higher results. Figure 1 demonstrates a traditional linear process (from sensing through commercializing), surrounded by Web 2.0 capabilities and the requisite architecture, which provide exceptional consumer insight and a pathway for collaborative change.

Figure 1. Main Elements of the Innovation Execution Framework



* Unified Communications employs voice, video, data, and mobility products that enable businesses to share information more quickly and effectively, improving productivity and reducing costs.

Source: Cisco IBSG, 2007

Innovation Failures Currently Outnumber Successes

The CPG industry is responsible for approximately US$3.4 trillion in business worldwide. According to Deloitte, industry executives expect revenue from new product introductions to account for 34 percent of 2007 revenue, up from 2 percent in 1998. This means $1.15 trillion in 2007 revenue will be driven by new products.

In 2005, CPG companies introduced 156,125 new products to the market. Only 4 percent of these products, however, achieved annual sales of more than $50 million. Roughly 80 percent of the products achieved annual sales of $10 million or less. Estimates of new product innovation failures range from 53 to 86 percent.

Looking globally, emerging markets represent an enormous opportunity for established CPG companies, but cultural preferences, the small percentage of consumers reached by modern retail, and daunting distribution and logistical challenges will have a negative effect on immediate sales growth projections in both emerging and developed markets.

IT Capabilities Are Insufficient

The IT capabilities needed to rapidly form and expand new networks are lacking, creating frustration and an inability to execute. CPG companies typically spend 1 to 3 percent of revenue on IT, and much of that supports traditional linear and internal processes. Collaboration, the ability to harness features of Web 2.0, and extension to key stakeholders (consumers, academia, and partners) are key differentiators in capturing the value of the overall Innovation Execution Framework.

Increased R&D Spending Does Not Necessarily Help

A 2005 Booz Allen Hamilton study showed that unlike other industries, such as healthcare, technology, and process manufacturing, increased research and development spending for CPG products did not correlate to increased results. It is estimated that only 4 percent of new consumer products generated by corporate R&D yield significant results.

The Solution

Moving to a Networked Process

CPG companies need to create and effectively manage "networked chaos," which is a fluid environment that encourages and enables consumer-originated ideas, as well as ideas from professional stakeholders. Networks can be small and short in duration, built around a disruptive technology, or they can be large and ongoing, creating a strong and sustainable link with consumers and key stakeholders on a global basis. Ongoing conversation and insight will spawn mini-networks that can germinate ideas, support collaboration on key topics, and promote virtual, global, rapid product development. The consumer, passively or actively, is at the heart of these networks and is integral to their success. The key is to be able to construct these networks rapidly, expand them at will, and fuel them with relevant technologies so that significant value is derived.

Simply attempting to bolt on the required collaboration, communication, and Web 2.0 capabilities and technologies to existing infrastructure often does not work. There is too large a gap in capability and agility within the internal environment. To achieve success, it is fundamental to build a solid, robust, and flexible network infrastructure that then can function as the platform for future business models.

The creation of these networks will improve innovation productivity dramatically. In some cases, this consumer-centric and networked approach will replace a traditional, internal, linear model. In other cases, it might be used to complement traditional models.

It is entirely possible to achieve a 25 percent improvement in CPG innovation productivity by reducing the total number of product launches within a given year (with subsequent reductions in operating and capital expenses, including research and development) and by increasing the total number of new products that achieve $50 million or more in annual revenues. Through the adoption of the Innovation Execution Framework and requisite processes, the Cisco Internet Business Solutions Group (IBSG) estimates this 25 percent improvement in innovation productivity would add $1.14 billion in annual gross profit to a $10 billion CPG firm (average) and $460 billion in additional value to the global CPG industry.

By incorporating a comprehensive, networked process, CPG companies can achieve significant improvements in product innovation success while dramatically reducing costs associated with this practice.

Procter & Gamble has applied Innovation Execution Framework concepts and doubled its innovation success rate. P&G increased its innovation productivity by 60 percent due to a reduction in internal R&D from 4.8 percent in 2000 to 3.4 percent today. P&G is targeting 50 percent external innovation by 2010.

The Consumer Insight Network

The Consumer Insight Network is the source of inspiration and perceptiveness. The key drivers of innovation are deep observations of consumer behaviors and needs, not existing assets, products, or positioning. Consumer involvement is spontaneous, not structured. The configuration is networked chaos with constant input and feedback, not linear. The corporate attitude is one of "inviting the consumer in."

Key Elements

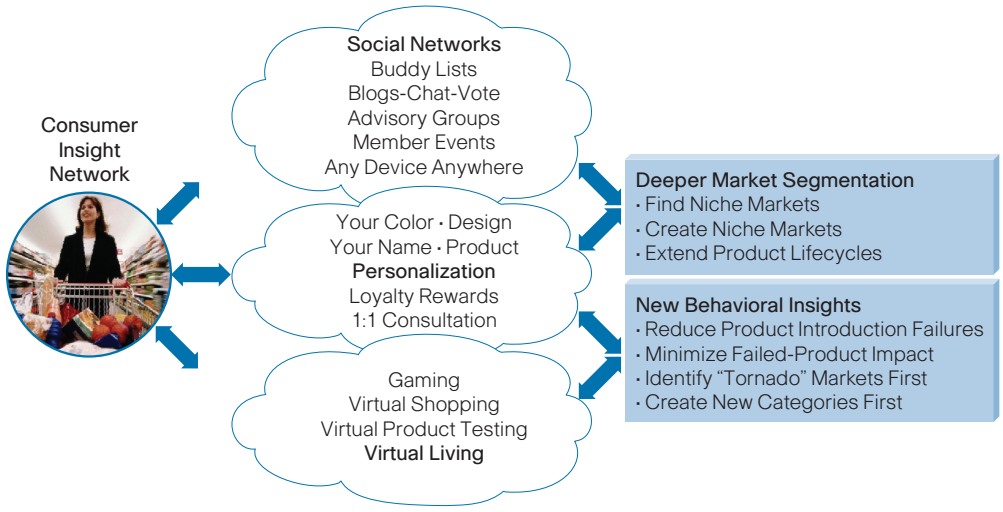
Interactive content: Internet-based social networks encourage and enable consumer-originated, interactive content devoted to issues relevant to CPG brand categories. The content can emerge from blogs, chat rooms, podcasts, personal videos, advisory and focus groups, special events for network members, and 1:1 real-time specialist and advisory communication. Such interactive content, not limited to targeted consumers but open to those of common interest in the category, can produce real-time insight into:

- Behavioral usage models (how I wash my hair in the morning)
- Trends and fashions (which hair colors and styles are fashionable or not)
- Media consumption and time expenditure (what I watch or listen to, free time, and so forth)

Studying consumer-originated, interactive content provides CPG companies with deeper and more accurate market segmentation. This, in turn, provides the opportunity to discover previously unknown niche markets, the creation of new niche markets, and extension of existing product lifecycles (see Figure 2). The acquisition of new behavioral insights helps drive early identification of new, fast-growing "tornado" markets and new category opportunities.

Consumer-originated feedback: The second important element of the Consumer Insight Network is that Internet-based social networks can encourage consumers and shoppers to offer feedback to CPG industries. This feedback provides ideas and product proposals; marketing promotion concepts in support of product innovation; and critical information for the corporate category community, such as women's health, men's personal care, or children's snack foods.

Figure 2. Key Elements of the Consumer Insight Network



Source: Cisco IBSG, 2007

Consumer Insight Network at Work: Starwood Hotels and Resorts Worldwide, Inc.

Writing as the "Starwood Lurker," Starwood Customer Services Coordinator William R. Sanders participates in message boards and actively engages consumers. The result: Sanders is able to increase company knowledge and, ultimately, create stronger customer loyalty by tracking consumer comments and buzz on relevant message boards, forums, and rating sites. Since November 2000, Sanders has made more than 12,000 posts to FlyerTalk, the "world's most popular frequent flyer community." Notable is the transparency with which Sanders does this, adding to his credibility on the board as a customer advocate.

The Open Innovation Network

A solution-oriented Open Innovation Network incorporates key learnings from the Consumer Insight Network for idea selection and development. It brings ideas into a virtual or physical Innovation Lab, providing rapid assimilation and high-tech enablement. Specific consumers or consumer groups may be invited in to ensure their needs are a focus throughout the process. Or the consumer insight group may be tasked with validation, testing, and collaboration, not as key stakeholders in the Open Innovation Network, but as auxiliary members. The primary purpose of the Open Innovation Network is to harness the scope and reach of the Internet for open-source ideas, and to assemble networks to act on those ideas quickly.

Key Elements

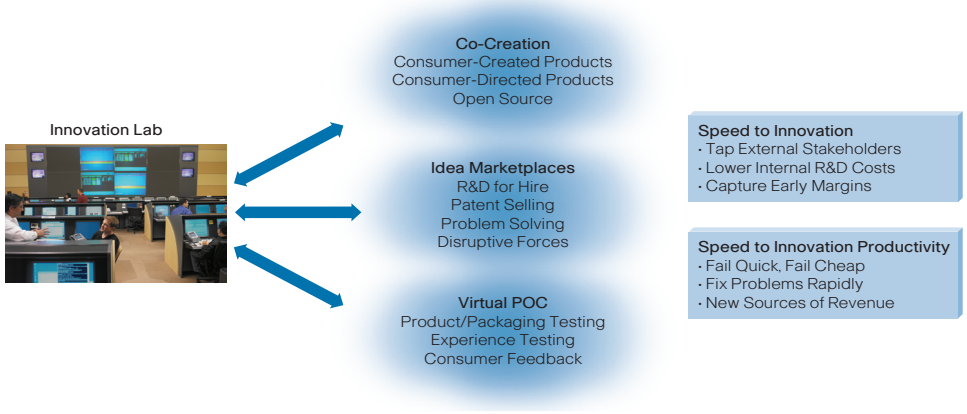
Consumer open-source product idea development: Internet-based networks encourage and enable consumer-originated open-source product idea development. Open source is not just a software development idea. In the context of the CPG industry, it can foster continuous innovation and improvement, create niche opportunities, and bind developers to the brand and the opportunity.

Professional open-source product idea development: Similar to consumer-generated open-source development, Internet-based networks can encourage and enable professional brand stakeholders and independent researchers to be involved in product idea development. Suppliers have a major stake in CPG innovation productivity success. Technology companies, such as HP, Intel, and Google, use worldwide networks of university research labs that are advancing the state of the art in areas of strategic importance.

New IP protection practices: New intellectual property (IP) protection practices are emerging rapidly. These practices should be used in the CPG industry. Companies may not always need to own all the IP, or employ all of the people that contribute to their innovation web. For this to work, companies must add value to any IP acquired on the open market, and will need to make the final decisions, ask the right questions, draw up strategies, source and analyze external inputs, and commercialize and distribute the right products.

Innovation Labs: At the heart of the Open Innovation Network is the Innovation Lab, a virtual or physical "always on" room (see Figure 3). This allows rapid assimilation and collision of inputs from the Consumer Insight Network, functional groups, professional stakeholders, partners, suppliers, and so forth. The success of the Innovation Lab is built upon a high degree of technological support. Technologies required to support the Innovation Lab include high-tech definition and video enablement (desktop; videoconferencing; Webconferencing; virtual white boarding; knowledge bases with secure, real-time communications such as e-mail, chart, intermodal, instant messaging, blogs, and so on) and strong authentication and authorization for protection of IP.

Figure 3. Key Elements of the Open Innovation Network



Source: Cisco IBSG, 2007

Open Innovation Network at Work: InnoCentive

InnoCentive provides a network of 80,000 "solvers" in 173 countries. This community tackles research problems for P&G, Boeing, DuPont, and 30 other companies. Some world-class companies also are offering financial awards for solutions to their scientific challenges. At P&G, for example, outside scientific networks contribute 35 percent of new products, up from 20 percent three years ago. Sales are up 40 percent per R&D staff member.

The Operational Agility Network

While the focus of this paper is on the first two components of the Innovation Execution Framework, it is not because the Operational Agility Network is less important. In fact, it is paramount to successful execution because getting new ideas into the marketplace quickly (product innovation) leads to positive business results regarding consumer-requested products.

Creating successful Operational Agility Networks requires physical changes to the manufacturing environment and is dependent on tight integration with other networks. Operational Agility Networks focus on driving short-cycle production and quick turnaround for line changes that allow CPG organizations to tie in point-of-sale (POS) data directly with production schedules. It also provides enterprise-wide visibility of inventory, enables daily adjustments to sourcing material, and automates promotional feeds to adjust production schedules.

The Operational Agility Network is a wide-ranging topic that is discussed, in greater detail, in additional white papers. For more in-depth analysis of the Operational Agility Network, please see the following Cisco papers: "Connected Manufacturing" (2006) and "Consumer-Driven Replenishment: Extending Consumer Sensing to Drive the Retail Demand Chain" (2005).

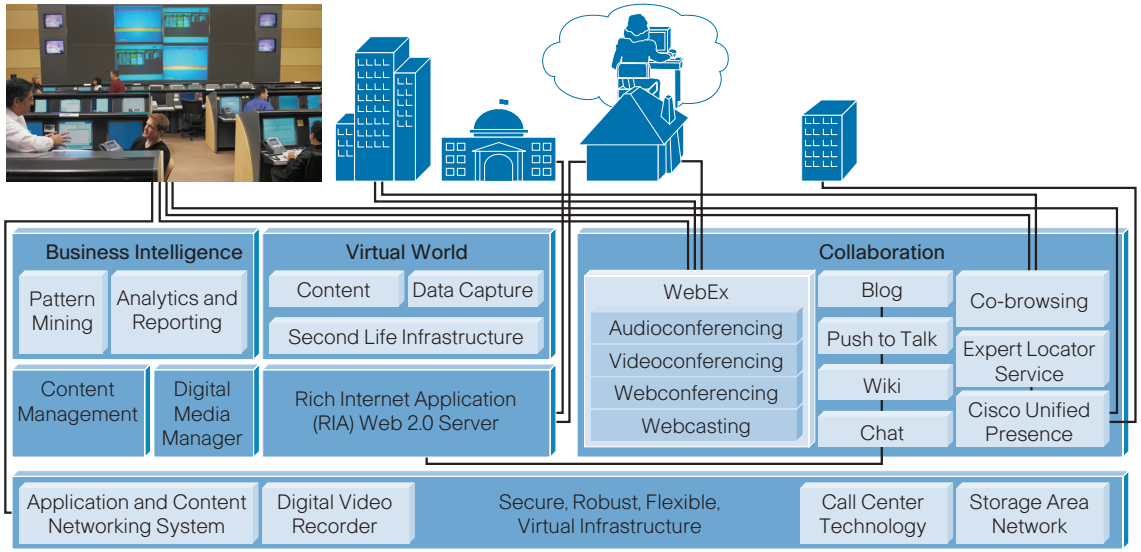
Operational Agility Network at Work: Boeing

With Boeing operating as final assembler—coordinating 132 structural and systems partners spread around the globe—two processes were critical: Boeing needed to secure the critical component for composites, titanium, and then make it available to its supply partners. In addition, demand and supply needed to be synchronized across multiple tiers so key components would arrive at Boeing's Washington facility on time, as needed. Boeing implemented Exostar—which provides a single point of connection for electronic security, commerce, and collaboration—to handle supply management duties, manage the complete order and returns lifecycle process across multiple tiers, and track consumption and replenishment for Boeing's Partner Managed Inventory program. The system monitors events and process exceptions against the master schedule using synchronized, time-sequenced demand signals for all partners.

Innovation Execution Framework Architecture

Achieving innovation productivity requires an architecture that accommodates the capabilities described above, thus creating a "borderless" enterprise. Aligning the evolution of the architecture with the company's framework priorities can drive an investment commensurate with a calculated ROI. For instance, implementing a Consumer Insight Network would align with specific IT investments as opposed to an Open Innovation Network. The full architecture is highlighted in Figure 4.

Figure 4. Innovation Execution Framework Architecture



Source: Cisco IBSG, 2007

Conclusion

In business, there is nothing more difficult to plan, or more challenging to manage, than the implementation of new and innovative systems. Yet, the success rate of current innovations tells us that fundamental changes must be made. It is not sustainable to continue on a course where product innovation failure rates can reach 86 percent. Some level of failure rate is desired to encourage risk taking, but successful innovation requires a more balanced portfolio.

Rapidly emerging Web 2.0 capabilities, coupled with an Innovative Execution Framework, are enabling a new wave of consumers and employees who are using cutting-edge media services to communicate and collaborate effectively. Successful organizations will be those that learn how to harness and develop members of this new generation into leaders of change and sources of exceptional consumer insights. These organizations will create unparalleled opportunities to succeed in a new, more complicated global environment. Strong execution capability is essential for success and requires a balanced investment focus on information technology, business process, and controlled cultural change. It requires rethinking traditional, hierarchical, structured methods in a new, dynamic, and consumer-centric world.

Appendix

Following is an overview of how estimates within this paper were developed.

The opportunity arises from **1)** cost takeout and **2)** revenue-growth potential.

1) Cost

Cisco research into the income statements of leading revenue-growth firms shows that a typical large manufacturer spends approximately the equivalent of 2 percent of revenues on R&D annually. Research from Mintel revealed that approximately 96 percent of new CPG product introductions fail to achieve "significant" success, implying a 4 percent "hit" rate. A recent study from Deloitte found that new product introductions account for 34 percent of manufacturers' revenue growth. Cisco estimates that CPG manufacturers spend the equivalent of 16 percent of annual revenue on product promotions and advertising. A recent report from Forrester Research estimates that 56 percent of CPG products end in failure (for the purposes of this analysis, Cisco has used a more conservative estimate of 50 percent failure).

The equation for the cost opportunity (wasted R&D investments), therefore, is:

R&D Productivity Gap	+	Promotions Productivity Gap
(Revenue x .02 x .96)		(Revenue x .34 x .16 x .5)

2) Revenue

Assuming a 1 percent improvement in "hit" rates for new CPG products (reaching 5 percent, up from the current estimate of 4 percent) gives rise to the following equation for revenue opportunity:

(Revenue x .34 x .25)

Combining both the cost and revenue elements, and applying these assumptions to the $3.4 billion CPG industry globally, and to a $10 billion CPG firm, yields total opportunities of $456 billion (at the industry level) and $1.14 billion (at the firm level).

More Information

The Cisco Internet Business Solutions Group (IBSG), the global strategic consulting arm of Cisco, helps Global Fortune 500 companies and public organizations transform the way they do business—first by designing innovative business processes, and then by integrating advanced technologies into visionary roadmaps that improve customer experience and revenue growth.

For further information about IBSG, visit http://www.cisco.com/go/ibsg

Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

Asia Pacific Headquarters
Cisco Systems, Inc.
168 Robinson Road
#28-01 Capital Tower
Singapore 068912
www.cisco.com
Tel: +65 6317 7777
Fax: +65 6317 7799

Europe Headquarters
Cisco Systems International BV
Haarlerbergpark
Haarlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: +31 0 800 020 0791
Fax: +31 0 20 357 1100

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

C11-408821-01 0707