TUCK SCHOOL OF BUSINESS AT DARTMOUTH
GLASSMEYER/MCNAMEE CENTER FOR DIGITAL STRATEGIES

Collaborative Product Generation

An Overview

Thought Leadership Summit on Digital Strategies
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Collaborative Product Generation

Thought Leadership Summit on Digital Strategies

An executive roundtable series co-founded by the
Center for Digital Strategies at the Tuck School of Business and Cisco Systems Inc.

Growing cost pressures, the demand for rapid product delivery, and the need to enlarge traditional markets or enter new ones are major forces affecting companies across all industries. Businesses are finding that it's often easier, faster, and more cost effective to meet these demands and enter new markets when they generate products in collaboration with partners. To understand the ways that collaboration can impact product generation and the nature of such collaborative relationships, Cisco Systems, and the Center for Digital Strategies at Dartmouth's Tuck School of Business recently convened the fourth in a series of thought leadership summits. This roundtable discussion, moderated by the publisher of Forbes, included business leaders and academics from Cargill, Cisco, Eaton, General Motors, the Haas School of Business at UC Berkeley, Hewlett-Packard, the McCombs School of Business at UT Austin, Staples, the Tuck School of Business at Dartmouth, and Whirlpool. The day's conversations led to a clearer understanding of the business reasons for collaborative product generation, strategies for choosing collaboration partners, and how digital tools and approaches can support collaborative processes.

Important Ideas Explored in This Article:

- ***Collaborative partners can play strategic or tactical roles.*** Strategic partners, often in parallel industries, help companies enter or create new markets. Tactical partners help companies overcome the barriers of cost or time.
- ***Strategic partnerships must be formed around consumers of the product.*** Consumer focus should drive the selection of strategic partners. Partners close to the consumer (in the value chain) bring direct consumer knowledge, but partners one or two levels removed can bring objectivity along with innovative approaches to the end product. Partners in parallel industries often bring a creative perspective and are less likely to be competitive in any way.
- ***Choosing partners means understanding what to do, what not to do, and how a partner can enrich or provide part of the product.*** Collaboration with clearly defined boundaries and complementary competencies can successfully extend reach or capabilities for both partners.
- ***Understanding the ownership of intellectual property is critical to success for business collaborations.*** Determining what partners will and will not share helps maintain agreed-upon roles and avoid turning partners into competitors.
- ***Tools that enable virtual collaboration across groups, geographies and company boundaries are available, and work fairly well.*** However, tools cannot replace the identification of common concepts, terms, and deliverables, along with standard project management disciplines when collaborating with partners towards common goals.
- ***Standard architectures can foster creative product generation.*** It is a commonly held view that standardization stifles creativity. Instead, standard processes can make it easier to collaboratively innovate in the areas that count most and simultaneously control costs and limit misunderstandings.

Part I: The Business Forces That Demand Collaborative Product Generation

Collaborative product generation is no longer an afterthought. Each company participating in the summit cited several factors that push them towards collaborative product generation, and a number of characteristics in the marketplace that make partnering and collaboration a necessity.

Participants find that the pace of change is causing them to rethink their business models. In rethinking those models, it's important to decide what business they're in, and what kinds of functions their partners perform. Mark Hillman, from GM, talked about the importance of external partner relationships to give businesses this reference point. He believes that collaboration is about leadership and common sense, working to understand what a company can do extremely well, because no single company can do everything well. Collaboration leverages each partner's capabilities and creates a stronger product.

What Drives the Decision to Partner?

Randy Pond (Cisco) divided the reasons that companies decide to partner into two tactical and two strategic categories. Tactical reasons to look for an outsourcing partner include reducing time to market or driving down costs. Strategic reasons to look for a partner include entering or creating new markets. For example, a North American company that wanted to grow geographically found a company in Europe which had the same need. The two discovered that they were in complementary parts of the value chain: the North American firm provided hardware and the European firm provided software. Bundling the products of both partners together, sales forces in both theaters extended the North American firm's reach into Europe, and the European company's reach into North America.

Another strong reason to partner is to regain competitiveness—being able to offer a product that truly competes with other products in the same class and category. Randy Burdick from HP talked about looking at a competitive product. Often, the product is no more advanced, but meets customer needs in a new way—a different form, different functions, or better pricing. A partner can add the missing ingredients to a company's product—thus making it more competitive.

Distinguishing Partners and What They Bring to Product Generation

The distinction between tactical and strategic partners reflects the factors that drive companies to partner—meeting time and cost goals versus a creative and forward-looking approach to entering or creating new markets. Gil Urban from Whirlpool addressed this: "I hear a lot of people talking about simply trying to find a way to generate a product more competitively: outsourcing for lower costs. When I think of collaborative product generation, that phrase means mutually beneficial, diverse ideas, and getting outside of your box: a win-win situation with somebody else." Competitive partnerships, designed to drive down cost or meet time pressures, are most often tactical. Collaborative partnerships, chosen to expand reach or capabilities, are most often strategic.

From a strategic partnership perspective, when companies are looking to open new markets, it's important that the business opportunity is a market that's big enough that, when created, everybody gains their fair share of the business. In the absence of a large enough market, all the partners will argue about how the profits will be divided. When this happens, the partnership starts to disintegrate.

Sara Beckman (UC Berkeley) suggested that opportunities for collaborative product generation occur because there is no supplier base to meet specialized needs for new products. Technology companies like IBM, HP and Dell started as vertical, integrated product design and manufacturing entities: they produced, manufactured and assembled their products internally. There were no companies available to outsource new manufacturing and assembly needs. Once the IBM's and HP's identified their core competencies, it became important to find and groom partners to take on non-core tasks—developing strategic partners for initial collaborative product generation. Once the supplier base was established and competitors appeared, these relationships became tactical. Don Bullock (Eaton) added that tactical partnerships enable corporate survival because components inevitably become commodities. The nature of partnerships can evolve and it is important to identify the migration. Companies who are good at identifying the migration from strategic to tactical have made a shift that can enable long-term health. Once a company identifies what it does well and what a partner does better, tactical relationships can be productive.

In some cases suppliers consider retailers and other partners to be potential competitors, even though they are often customers. Still, intense cost pressures have created more partnerships, as people have recognized mutual survival is at stake. Summit attendees agreed that there is more partnering going on now than ever, and the most important factors are the intense cost pressures and the greater profitability that can accompany such partnerships.

Is It Possible to Include End Customers in Product Generation?

Perhaps the ultimate collaborative product generation partnership would be one with the individuals who consume products, but as yet there is no clear way to include them. In retail, where consumer data is most available, few have taken advantage of the vast consumer information available to them. Companies with more complex products and solutions don't see obvious mediums for end customer product collaboration, primarily because solutions development calls for expertise that end customers don't have.

Retail businesses are the closest to end customers, yet Kevin Holian (Staples) said that his organization rarely spoke with branded manufacturers about core product development issues. Staples does conduct pre-launch conversations with them about sales and post-mortems to inform their branded partners about product and package configuration. But Staples rarely has conversations about product functionality and specific design with suppliers or end customers prior to a product's development.

Large retailers with both reach and financial resources, Wal-Mart for example, could influence manufacturing and product design much more aggressively than they do today. Currently the leverage of large retailers influences packaging and price points, but little more. David D'Angelo (Staples) added that for the businesses that supply retailers, it's important to listen to retailers. Since they understand and have access to more direct customer data, retailers could certainly drive specific product categories in new directions. The desire to partner up the value chain has been echoed by Lowe's at past summits.

With innovative or technology-based products, it's hard for customers to understand or articulate needs. Listening to customer needs is important, but those needs can only be met by next-generation products—products that end customers could not have asked for or predicted. Dell, known as a fast follower, formed a strategic partnership for collaborative product generation with Apple technologists, bringing their industry-first introduction of lithium ion batteries to fix reliability problems in their earlier laptops. Consumers knew that they didn't want the failures that came with those early Dell products, but they never could have anticipated or described the solution that would meet their needs. Vish Krishnan (UT, Austin) described the situation where a company takes either a supplier's proprietary technology or a customer's tacit unarticulated need and turns that into an innovative new product. He recalled Henry Ford's understanding of meeting customer need: "If I gave my customers what they wanted, they'd have gotten a faster horse."

Rita Heise (Cargill) pointed out that Cargill's framework was designed to enable strategic partnerships and collaborative product generation. The three pillars of the Cargill framework—innovation, high performance, and customer focus—lead to a focus on long-term strategic collaborations.

Part II: How Do Companies Choose Partners?

Choosing partners depends on several factors including expertise, culture, capabilities and customer focus. The factors for choosing strategic partners differ substantially from the factors for choosing tactical partners, although sometimes factors that can be tactical in one business become strategic in another. Mark Hillman (General Motors) pointed out that because of the volume of materials needs at General Motors, price-based materials vendors—normally viewed as more tactical in focus—have become strategic partners for GM.

Often, choosing the right partners throughout the value chain can yield increased innovation. However, to be sustainable the partnership must present an opportunity for both sides to benefit. Craig Black (Eaton) said that an excessive focus on tactics could cut off opportunities and preclude the health of the partner and the business itself.

All parties in the partnership must be willing to give up something (for example some control), to gain a sustainable long-term relationship. This means that trust is an integral part of a long-term collaboration. Sara Beckman (UC Berkeley) said that if a partnership is customer-focused, trust can grow between partners because the product will be successful—more sales provide a more positive likely outcome for all.

Mark Hillman talked about the strategic nature of suppliers for GM. GM's highly leveraged model demands billions of dollars of commodities. Just 5% of GM's budget is spent on labor—the rest is spent on materials. In other businesses commodity suppliers would be considered tactical partners. In the case of GM the criteria for choosing strategic partners is stable, large-scale volume. But services that are more difficult to commoditize, like design, are where even GM sees the most robust collaborative relationships.

Hank Marcy (Whirlpool) talked about Whirlpool's approach to choosing and working with strategic partners:

> "When choosing partners for strategic alliances, we focus on parallel industries. Products that are used with our products, that rely on our products—those that really get us to touch the consumer, help us to innovate. Fabric, chemical and food manufacturers are the companies that make products that touch our customers. It's important to go into these relationships understanding that they can't be equal. For example, when we work with a big soap manufacturer, 70-30 would be nice, but working together, we're still winning more than we would have if we hadn't worked together."

Establishing Rules of Engagement with Partners

Initial definitions and agreements protect both parties. The measure of a successful tactical partnership is efficiency in cost, because tactical partnerships are usually based on cost decisions—including opening up new markets at a lower cost, logistics relationships, and outsourcing. Cost metrics and service agreements based on time or product availability make measurement easy. Randy Burdick (HP) said that with tactical partnerships there is more common agreement about financial metrics. Strategic partnerships are more difficult to measure—market share is the best indicator.

The main question, especially in the case of larger partners, is how to keep the partner from becoming a competitor. In many cases cited, including Canon and HP in the printer market or

Intel's attempt to build its own computer business, companies need to look at the potential economics of a competitive situation when deciding how to engage with a partner. It's important to understand whether or not that partner could be a successful competitor based on focus, direction, and their own best interests.

Each partner in the value chain must be successful for the value chain as a whole to succeed for any length of time. As part of the rules of engagement, partners can define collaborative terms to enable growth by driving down cost, augmenting service offerings, and co-marketing. When partners have an interest in each other's ability to offer value, this interest enables a sustainable relationship for all.

Brad Boston (Cisco) speculated that perhaps purchasing practices have negatively influenced, if not poisoned, the ability to collaborate positively. He voiced the concern that the purchasing mentality distorts the opportunity to collaborate with a variety of partners up and down the value chain. This is especially concerning, he noted, when it happens even when discussing complex products or systems.

The Influence of Brand In Partner Selection

In theory, brand strength is driven by consumer knowledge and product innovation: those two create strength in the retail channel. But brand pull may influence only one or two partnerships, because of the changing nature of consumer brand perception.

A key brand in certain businesses can drive customers. Eric Johnson (Tuck) talked about an example of brand pull: Dillard's, a major department store chain, is also a major private label manufacturer or reseller. The Liz Claiborne brand is a pricing umbrella for Dillard's, as well as a traffic generator and an innovator. It may not always provide the highest volume, but it is a brand that can still draw customers who will also buy private label garments when they actually arrive at the store. Kevin Holian (Staples) said: "Retailers will never get rid of Liz, but there's a lot more volume through private labels. That goes back to the point of innovation. You can commoditize most anything in the store."

Kevin Holian (Staples) said that in today's retail space, most supplier relationships are tactical. Today, few brands are irreplaceable, and yet from the manufacturer's perspective brand power often defines channel stability in that industry. But with few exceptions, there is little brand pull, and without that pull, the manufacturer is at great peril for the next round of negotiations or the next innovation of the marketplace. Given the lack of brand strength with the consumer, many retailers seize the opportunity to create their own brands based on collaborative product generation partnerships.

Do Consumers Play a Role in Selecting Partners?

Partnerships, tactical and strategic, have to deliver value to the product's end consumer. That is the true role of the consumer in selecting partners—consumer knowledge and concern should drive the selection of partners. With this kind of approach, the challenge is to identify the focal point for innovation—it can be anywhere in the value chain.

Many retailers stock products that are consumer-ready. Innovation comes from retail suppliers, to whom they outsource their private label and private-label packaging business, looking for consistency, speed to market, and the cost savings of consolidation and global providers. Because of the rapid turn around in retail, product partnerships are tactical. If the partner can provide what the consumer wants, at a price that's attractive to the retailer, the consumer wins and so do the retailer and its supplier.

In heavier industries, consumer needs and wants have to be predicted over several years and meeting those needs may well include long-term strategic agreements with suppliers who can guarantee availability, volume, and cost.

What Is the Impact of Intellectual Property (IP) on Partner Selection?

Understanding and controlling the ownership of IP, drawing the line determining what partners share and what they keep private, is critical to long-term success for business partnerships and collaborations in all sectors. One of the unforeseen ramifications of collaboration is the creation of competitors based on IP that has not been clearly delineated in terms of ownership. A potential partner's ability and willingness to define and make agreements about IP at the beginning of the partnership is an important sign about the sustainability of the partnership.

Brad Boston (Cisco) talked about how outsourcing development or other processes to partners, especially those in foreign countries like India and China, can create real questions not only about the legal ownership of IP. How can agreements to protect IP be enforced? How do companies work with partners, avoid duplicate work, and still protect IP? This issue raises new questions about the viability of partnering in foreign countries—do companies have to bring development back in house or is there a better way to collaborate with price-competitive partners and still protect IP?

Partnering, as in the case of HP and Canon, can fill a gap in the product line. But without appropriate IP definitions and agreements, this partnership enabled Canon to create new lines of printers to compete with the printers it supplied to its partner, HP. In this case, the question went beyond legally defined IP, addressing the ongoing body of knowledge that may or may not be legally protectable. The question of protecting a body of knowledge, beyond the proscribed boundaries of IP, is the larger issue and must be understood and agreed upon before entering into any partnership.

Part III: Promising Collaboration Approaches and Tools

The challenge inherent in both discussion and implementation of digital approaches and tools is that collaboration, as a working discipline, is relatively recent. Kevin Holian (Staples) suggested that collaborative product generation is in its infancy, in the same way that supply chain collaboration was in the early 1990s. There were no consistent names or tools then for supply chain planning, and there are no consistent names to talk about or control the product generation process now: there is no common topology yet. Instant messaging and email, inside and outside of companies, lead to a lack of control, accountability, and security in the collaborative partnering process. Collaboration inside and outside of companies are both impeded, and if the best companies can do is collaborate internally the main benefits of partnership—diverse ideas—will be lost. Sara Beckman (UC Berkeley) pointed out that diverse collaborations across corporate and national cultures and languages, are often difficult to establish as there are no common tools or terms.

One approach to collaboration mentioned was standardized architectures that could be used in common by different groups. Randy Pond (Cisco), talked about standardizing architectures—the ability to create boundaries around execution—and their ability to drive change, and encourage collaboration between engineering and manufacturing. Standardization can act as a catalyst for change. Manufacturing receives engineering's output. To enable an easier handoff, traditionally, manufacturing organizations feel compelled to make more rules—but if standardization can loosen those rules within a framework, with templates that both sides understand, it's possible to get a better product to begin with and save manufacturing time.

Three tools for collaboration were mentioned by roundtable participants: TeamRoom, QuickPlace, and SameTime. Each is based on a metaphor of place, joining groups across group and company boundaries. These tools create virtual places on the network, where geographically diverse teams can meet and collaborate. Each created place contains communication tools, including chat tools, a virtual whiteboard, Web browser, diagramming tools, an outliner, and a post-it note program, online awareness, instant messaging and application sharing. Users can see icons of each other in the place, and they can also see the actions of other team members. Users can add voice with simple audio conferencing tools.

Using "Place-Style" Collaboration Tools

Place-style tools have been used for both internal and external collaboration during product development. Early in the cycle, these tools enable employees from each partnering entity to present concepts and presentations, marketing data, consumer research data. Later in the process, many of these tools are geared towards working with project teams: they provide project calendars, identify project milestone dates and deliverables.

These tools are self-managed. Once an IT organization creates the capability, team members manage the place. In the case of Whirlpool and QuickPlace, the team owner of a project-specific "QuickPlace" manages access, but cannot give access to any other QuickPlace—he or she can only authorize their project teams. QuickPlace is auditable and controllable, although any time companies open up and share information with external entities there is a security risk that includes identities and passwords. But a place-style tool, with its audit trail, is still more secure and easily traceable than currently unstructured email and instant message communications. Place-style tools actually up-level security for collaborative partnerships. One company implemented SameTime to create secure instant messaging for collaboration because thousands of employees were using insecure AOL Instant Messenger.

Lessons Learned About Collaboration Tools

Gil Urban talked about Whirlpool's recent QuickPlace introduction: in the two months since its deployment, the IT organization has created more than 200 QuickPlaces, enabling engineering teams to collaborate globally—enabling inter-team collaboration. Within the 60 days following the summit, Whirlpool IT will provide QuickPlace capabilities for external partners, enabling collaborative partnerships outside of Whirlpool.

Through its internal use of QuickPlace, Whirlpool learned that tools alone are not a substitute for project discipline. The system that enables content exchange and conversations doesn't replace the need for structured project management. Managers for large-scale projects, especially projects with extensive dependencies, cannot assume that other groups and individuals are meeting deadlines and delivering to project milestones without personal interaction. Whirlpool's experience was that with new tools standard project disciplines were sometimes forgotten and the project suffered. Beyond that, when collaborating in online, partners must identify common terms to communicate across group and project boundaries. It's also important to create policies for use, or people will use these tools for activities they weren't intended for, wasting valuable provisioning and administrative resources.

When choosing a place-style tool, it's important to choose one that is easy to administer and manage, and one that is easy for the largest number of employees to use.

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