

Editorial

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What motivates a consumer to become involved in the production process? Why would competitors cooperate within a business ecosystem? How does co-creating value fit into the management of innovation? What is co-design and does it provide value beyond monetization? What role can co-creation play in a business strategy? These are some of the questions that the authors address in this issue of the OSBR.

As always, we encourage readers to share articles of interest with their colleagues, and to provide their comments either online or directly to the authors. We hope you enjoy this issue of the OSBR.

The editorial theme for the upcoming January issue of the OSBR is Success Factors. Submissions are due by December 20--contact the Editor if you are interested in a submission.

Dru Lavigne

Editor-in-Chief

Dru Lavigne is a technical writer and IT consultant who has been active with open source communities since the mid-1990s. She writes regularly for BSD Magazine and is the author of the books BSD Hacks, The Best of FreeBSD Basics, and the upcoming Definitive Guide to PC-BSD.

The December issue of the OSBR continues our discussion on the topic of value co-creation. According to Prahalad and Krishnan (<http://www.mcgraw-hill.co.uk/html/0071598286.html>), most of the successful companies in 2015 will be using value co-creation practices and companies that do not make the efforts to adopt such practices will soon lack a serious competitive advantage. Business models based on value co-creation are not simply adopting a new way of doing business. Value co-creation business models follow the way society goes and missing this tendency might be critical for businesses. The key danger is to try seeing value co-creation within the context of our old thinking. This is an easy human mistake that could lead to the wrong questions to answer. In exploring value co-creation, we have not discussed all the possible answers, but have set a stage for finding the right questions.

Michael Etgar discusses the factors that may enhance the ability of consumers to engage in co-production.

Tony Bailetti and David Hudson provide an analysis of the multiple aspects of value co-creation within the context of business ecosystems.

Stoyan Tanev, Mette Knudsen and Wolfgang Gerstlberger discuss the emerging value co-creation paradigm within the context innovation management.

Liz Sanders and George Simons suggest a social vision for value co-creation that helps in organizing the seemingly disparate application of three types of value co-creation: monetary, use/experience and social. Their focus is on the social type of value.

Alex Pedrosa provides some first insights from a qualitative study focusing on the different types of value that all relevant stakeholders could expect from engaging in co-innovation.

Venkat Mangudi answers the question "what lessons can "green" computing learn from open source?"

We hope you enjoy learning more about this editorial theme as much as we enjoyed putting this issue together. Please feel free to contact the authors or the editors for questions, insights, or comments on this important topic.

Stoyan Tanev

Guest Editor

Stoyan Tanev is Associate Professor in the Department of Industrial and Civil Engineering at the University of Southern Denmark. He is part of the Integrative Innovation Management Unit, a research group that operates across the faculties of social sciences and engineering. Stoyan had a similar position in the Technology Innovation Management Program in the Department of Systems and Computer Engineering at Carleton University and he worked for several years as an optical designer in the Ottawa high tech industry. Stoyan has a M.Sc. and Ph.D. in Physics, a M.Eng. in Technology Innovation Management, and a M.A. His main research interests are: design and development of value co-creation platforms, value co-creation business models, value co-creation platforms for user-driven innovation, and technological infrastructures enabling value co-creation oriented business processes. He is also interested in the philosophy of technology, business ethics, and general epistemological issues at the interface of philosophy of religion and physics.

ENGAGING CONSUMERS IN CO-PRODUCTION

"A deeper understanding of how consumers decide whether or not to engage in co-production, and the corresponding decision processes is imperative."

Michael Etgar, A Descriptive Model of the Consumer Co-production Process

As co-production becomes an important engagement for many consumer-supplier situations, the issue of how to encourage consumers to engage in co-production becomes an important question. Marketers need to recognize that co-production is not an automatic consumer situation, but rather a conscious decision by consumers to engage in such activities.

This article presents several factors which may enhance the ability of consumers to engage in co-production. To engage consumers, marketers have to ensure that they offer those products and services that can be individually adjusted and modified, and to present them to consumers who have a higher propensity to engage in co-production activities. In order for consumers to agree to such endeavours, marketers must find what kind of benefits targeted consumers seek in such activities. Those usually encompass economic, psychological and social needs. Then, they have to offer them packages which can fulfill such needs.

Introduction

Co-production refers to the involvement of consumers in the various value creating activities through which products and services are made. These activities include the production and distribution processes which are usually performed in the course of manufacturing a product or creating a service for a given target group of consumers.

The trend towards greater consumer involvement has been activated by the substantial changes in technology, consumer sophistication, and regulatory environments.

In particular, the development of digital technologies which allow consumers to have instant access to stored information and to create and disseminate text, pictures and voice messages at minimal cost, has contributed significantly to this trend. Consumers are involved in activities such as: i) the production of their own individually designed and planned music compilations, movies and videos; ii) assembling and self delivering their own furniture bought at IKEA; iii) designing their own travel packages; iv) and planning their own unique well-being and health maintenance services. Consumers may design their own newspapers and magazines by using Really Simple Syndication (RSS, <http://en.wikipedia.org/wiki/Rss>) to download particular types of news items. Developments in virtual books imply a similar future in book publishing.

Co-production reflects a conscious strategic decision by consumers to become involved in production-like activities. For each co-production situation, one can also find consumers who do not engage in any co-productive activity. In order to understand how to engage consumers in co-production activities, we must understand the mechanisms which lead them to participate. Similarly to their motivation for other consumption related decisions, consumers decide to engage in co-production to satisfy their diverse economic, psychological and social needs. We need to carefully study these needs and show how their proper handling could increase consumers' propensity to engage in co-production.

Economic Needs

A major drive to engage in co-production is economic. Through co-production, consumers relieve manufacturers and retailers from performing various activities along the value creation chain which allows the latter to lower their production

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costs. These cost savings are then translated to price reductions to consumers. A good example is the strategy of the Swedish retail chain IKEA which offers consumers relatively low prices for furniture. In return, it expects buyers to become involved in the production process (co-produce) by demanding that they buy unassembled packages and assemble themselves the packaged components into a complete piece of furniture. Customers also self-deliver these packages from IKEA stores to their own places of residence. This format of selling unassembled packages and transferring home deliveries to the buyers significantly lowers IKEA's transportation costs along the whole supply chain from the original manufacturers up to the consumer. It also saves the retailer storage space and eliminates the need for large warehouses along its internal supply chain.

While co-production lowers costs for manufacturers and retailers, it imposes costs upon the co-producing consumers. These reflect the fact that such cost reduction is achieved by transferring to the co-producing consumers various value-creating activities required to manufacture a given product or service. To perform these activities, consumers need to use various resources and the costs of their use must be considered by consumers before they decide whether co-production is worthwhile.

The costs associated with co-production primarily include the costs of consumers' time and effort and the use of their own knowledge and skills which often requires years of investment. Self delivery of furniture, self assembly of furniture pieces, and downloading music or videos from iTunes or YouTube takes time. While some consumers may enjoy such activities and view them as experience providing, others may tire of these activities, especially if they have to repeat them over time.

The use of a consumer's time for co-production must be valued as the time spent in co-production reflects its value to the consumer. Time may also represent an alternative value to the consumer who prefers activities such as spending time with family, engaging in sports, or entertaining friends.

Consumers need to employ various equipment to perform the relevant activities. To assemble IKEA furniture, consumers need to acquire diverse tools and a vehicle to haul the packages from IKEA stores. The costs of use of such resources are the actual costs of their use in the process of co-production.

Rational consumers add up all these costs of co-production activities and determine their own internal costs of co-production. They compare these internal costs with the corresponding discount in price from the manufacturers or retailers who participate in co-production activities. When the former are much lower than the latter, consumers will opt for co-production. Because a large part of the consumer's direct costs are subjective, such as the value of the time they spend on co-production activities, the ultimate decision to be involved in co-production may vary across consumer segments.

Young couples or students have more free time and the economic value of their time is low. High level executives do not have free time and the economic value of their time is high. One can easily expect that among IKEA customers, we find many young couples, students or low earning individuals and relatively few middle aged, highly paid executives or lawyers. Similarly, some consumers may maintain life styles which are more conducive to the performance of different co-producing activities. A music loving teenager may find it easier to download songs than a sports fanatic.

ENGAGING CONSUMERS IN CO-PRODUCTION

Another advantage of co-production is its ability to help consumers achieve greater personalization and to reduce the level of risk of inappropriateness of the products they purchase. Consumers today increasingly seek personalization. A few generations ago, consumers were satisfied with buying one type of athletic shoe. The modern consumer desires athletic shoes uniquely designed to fit the specific type of sports in which they want to be engaged, their specific type of body, and even their specific type of leg structure. Similarly, a generation or two ago, consumers were satisfied with consuming mass produced tourist packages which were marketed to all. Today, many consumers prefer to build their own unique travel packages.

The higher level of personalization which modern consumers seek also increases their level of risk of not receiving the exact type of product they desire. Consumers may decide to become involved in the production or design of the products and services they buy to reduce the level of risk that they will get products and services that are not suitable for their needs. Through co-production, consumers can better supervise both personally and directly any critical stages of manufacturing and ensure a better fit for the fulfillment of their specific needs.

We could summarize that consumers tend to be more engaged in co-production in situations where there is an opportunity to receive substantial price reductions from manufacturers and retailers while they themselves need to bear only minor costs. These cost advantages will be higher for consumers belonging to specific demographic and life style segments. Co-production will also be encouraged in situations where consumers want highly personalized items and the current mass manufacturing processes cannot ensure items with the specifications they desire.

Satisfaction of Psychological Needs

The co-production decision is not purely economic. A major motivation is psychological, covering a host of diverse drives and motivations. A major motivation is the desire to be involved in meaningful activities. Modern life styles separate many people from creative and emotionally and physically rewarding activities. Many are engaged in mundane and highly repetitive work which has no direct relationship to daily consumer routines, creating alienation of many workers from their daily activities. Co-production allows consumers to become re-involved in production-like activities which have a direct link to their daily life and desires. Some consumers love to tinker around the house and be involved in do-it-yourself (DIY) activities.

Many co-productive activities are basically extended hobbies which allow consumers to exhibit their creative drives and their desire to play. Modern life and employment directs many individuals to engage in non-physical activities, to sit all day and to utilize mainly their non-physical capacities. Through co-production, many individuals can engage in more physical DIY activities.

Another important factor is the desire of many consumers for self expression, distinction and uniqueness. Co-producing consumers become involved in the design of their own jeans, shoes or houses in order to achieve distinction from other consumers. Such differentiation can not be achieved through mass production of identical items. Co-production changes mass produced products into more handcrafted items with a personal touch.

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Co-production also raises the psychological self evaluation, or the internal value, of many individuals who feel important when they are consulted by business personalities, converse with research engineers, and interact with vice presidents of marketing. Related is the ability of co-producing consumers to feel self fulfillment, from being able to show to themselves and their family and friends that they can complete specific tasks.

Co-production allows consumers to increase their benefits from consuming and buying various items by introducing them to experiential shopping and use. Consumers can become involved in the creation of ice cream flavours by informing the ice cream vendor which items to mix. Shoppers at Build-A-Bear (<http://buildabear.ca>) toy stores construct their own, unique toy bears determining everything from the color of its skin, its clothing, its greeting on a special chip, up to his furniture and friends. Similarly, shoppers at chocolate factories can cook and prepare their own unique blend of chocolates. It can be concluded that consumers tend to engage in co-production activities that offer meaning, include elements of play, are similar to hobbies and free time activities, allow self expression, allow expressions of creativity and self fulfillment, and contain elements of physical activity.

Co-production may also allow consumers to satisfy diverse social needs. Modern times increase the feeling of personal alienation and loneliness. People try to overcome this by creating social networks based around various topics and socially connecting factors. Those may include age, social status, interests and life styles. Consumption of particular items and shared interests and experiences offer attractive bases for social networks. Co-production creates social networks of consumers, users and employees who share common experiences and give consumers a sense of belonging.

Social networks of consumers who share similar experiences from using a given product or receiving a similar service, both good and bad, are highly valued. In many cases, such social networks carry high social status because they indicate privileged life styles such as those related to gourmet cooking, wine making, music preparation or specific sports. Participation in such social networks also raises consumers' self esteem.

Operational Implications

Modern consumption culture is often tied to life styles, implying that it is the actual type of use of the product which gives it its meaning. When consumers use the product in a given use context and in conjunction with other products and services, they create the actual benefits the product can provide. Co-production takes place when such benefits are created; therefore, co-production will be enhanced in products and services which are primarily tied to life styles.

Another important attribute of modern consumption culture is its increasing reliance on service components. Many tangible goods such as foods, baby products, clothing, and computing devices include a service component in their basic package of benefits. Toys are no longer just toys, but vehicles to improve a child's cognitive, physical, social or emotional skills. Therefore, they come with educational content regarding its use, benchmark monitoring of a child's progress, and contact information for interactive communications. Trips abroad are educational, relaxing, sports related or entertainment oriented. Food is associated with health maintenance and socializing with friends or family. Within this framework, co-production is easier because all these services demand direct inputs from the user or consumer.

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Consumers tend to engage in co-production when the products they purchase include a higher component of services, are related to specific life styles, and allow them to connect with distinct social networks.

Product and Consumer Characteristics

Co-production is more suitable for some products and consumers than for others. Co-production leads to personalization which implies changes in product design and attributes. Co-production is more easily realized in product categories where items can have diverse specifications rather than in commodity like products. Unique brands with well defined product positioning are probably also less suited for individual adjustments via co-production. Those products are desired exactly for their well defined and advertised specific characteristics and personal adjustments will only reduce their attractiveness. Thus, when Coca Cola changed the traditional taste of its drinks, consumers rebelled and forced the company to revert to the classic Cola taste.

In summary, marketers need to recognize that co-production is not an automatic consumer's situation. To engage consumers in co-production, marketers have to ensure that they offer suitable products and services to consumers with a higher propensity to engage in co-production activities. In order for consumers to agree to such endeavours, marketers must find what benefits targeted consumers seek in such activities and offer them packages which can fulfill such needs.

Michael Etgar is a professor at the School of Business Administration in the College of Management– Academic Studies, Israel. He currently serves as the Academic Director of the Supply Channels Management Program in the School. Professor Etgar earned his Ph.D in Marketing at UC Berkeley and has taught in NYU, University of Northern Florida and at SUNY Buffalo. He has written over 50 articles in marketing, two books, and numerous chapters in several books. He has consulted to several large scale Israeli companies, to government agencies and to several international organizations. Currently he is engaged in several research projects about international retailing, co-production, application of new technologies for marketing management and service quality.

LESSONS LEARNED FROM LEAD TO WIN ECOSYSTEM

“In order to implement change by innovation, co-creation needs to be implemented as disruptively as necessary and as non-disruptively as possible.”

2009 LSE Enterprise team that included Patrick Humphreys, Alain Samson, Thorsten Roser, and Eidi Cruz-Valdivieso

While the concepts of value co-creation and business ecosystems have become dominant, there is a lack of conceptual clarity as to the role of co-creation projects in a business ecosystem. The objective of this article is to provide concrete examples of co-creation projects in vendor neutral ecosystems using lessons learned from operating the Lead to Win (<http://www.leadtowin.ca>) ecosystem.

The article is organized into four sections. The first section defines vendor neutral business ecosystems and co-creation projects. The second section provides a short description of the Lead to Win ecosystem. The third section uses concrete examples to illustrate the lessons learned about co-creation projects in vendor neutral ecosystems. The fourth section describes key takeaways based on our five months experience operating the keystone of the Lead to Win ecosystem.

Business Ecosystems and Co-creation Projects

A business ecosystem is comprised of agents (companies, individuals, academic institutions, government agencies, or any other organization) that use a community oriented out-of-the-box platform (components, tools, rules, processes, and values) to create and deliver value to their customers. In a healthy ecosystem, agents concurrently collaborate and compete in the marketplace.

A business ecosystem can be organized into four types based on whether or not it is dominated by a single supplier or whether or not it is open to those who meet a

specific criteria which is transparent to the public. A vendor neutral business ecosystem is one where no vendor dominates and membership is open to all individuals and/or organizations that meet specific criteria.

A keystone is an organization that provides the out-of-the-box platform for individuals and organizations to carry out projects. These projects can be organized in terms of their participatory model into: contributory, collaborative, co-creation and co-option. All projects entail a planned program of work that requires a large amount of time, effort, and planning to complete.

Three features distinguish co-creation projects from the other project types. First, the initial framing of a co-creation project originates in a partnership of agents rather than the keystone's staff. Instead of the keystone staff saying, "We want a portal for startup companies, please collaborate with us to make it happen", one or more agents approach the keystone staff seeking assistance to realize a project using the keystone platform and services. Keystone staff may or may not participate directly in the co-creation project.

Second, the outcomes and process of a co-creation project reflect the expectations, preferences and working styles of the creators more than those of the keystone. Creators feel more ownership over the process and the final outcomes than do the keystone staff.

Third, individuals engaged in co-creation projects perceive the keystone staff as individuals who serve the needs of creators rather than providers of services that are perceived by the keystone as valuable. Co-creative projects are demand-driven in the most rigorous sense of the term, and they often require keystone goals to take a backseat to creators' goals.

LESSONS LEARNED FROM LEAD TO WIN ECOSYSTEM

Lead to Win

Lead to Win is a business ecosystem designed to create technology jobs and attract investment into technology companies that operate in Canada's Capital Region. As of the end of November, 2009 a total of 101 founders of 71 technology startups were part of the Lead to Win ecosystem. Lead to Win has been operating as a vendor-neutral ecosystem since early April, 2009.

To be part of the Lead to Win ecosystem, founders of a technology company must pass three gates. Each start-up in the ecosystem: i) is expected to create a minimum of six technology jobs in Canada's Capital Region; ii) can use the keystone's infrastructure to co-create value with its customers, partners and other organizations; and iii) has access to a variety of services designed to help companies grow.

The 2009 launch of Lead to Win built on the outcomes of a joint industry-university research program on open source projects and vendor neutral ecosystems and on the success of the alumni of a tech entrepreneurship course offered in early 2002. The research was carried out by faculty and students in Carleton's Technology Innovation Management program (<http://www.carleton.ca/tim>) and their industry partners.

Canada's Capital Region stretches out on both sides of the Ottawa River to include parts of two Canadian provinces, Ontario (to the south and west) and Quebec (to the north and east). Canada's Capital Region contains two major cities, Ottawa and Gatineau, and has a population of 1.081 million as of 2000. Canada's Capital Region is one of Canada's most bilingual communities, with nearly half a million people speaking both English and French. The region is home to a large number of talented individuals owing to the presence of several major Federal gov-

ernment research agencies.

Reasons Lead to Win was Launched

Lead to Win was launched as a response to the recent and dramatic economic downturn. The downturn's effects included loss of technology jobs, withdrawal of venture capital, the break-up of the largest local private sector technology company (Nortel), and the need to adjust to the realities of the new economy.

According to Statistics Canada, technology-sector employment in Canada's Capital Region decreased from 72,400 in May 2000 to 53,100 in August 2009, a 30% drop. Over the last 12 months, 8,600 technology jobs were lost. Venture capital investment decreased from \$1.3 billion in 2000 (74 deals) to less than \$24 million in 2009 (1 deal).

For years, Nortel employed the largest number of research and development (R&D) personnel in the region and was the largest R&D spender in the country. Nortel was a telecom giant that was a source of great pride for Canadians in general and the technology community in Canada's Capital Region in particular. On January 14, 2009, Nortel filed for bankruptcy protection. The company's demise shook the technology community across the country.

It is widely acknowledged that the world is entering a new economy and that we are experiencing shifts as profound as those experienced when the world moved from the agricultural to the industrial economy. Canada's Capital Region has certainly changed drastically in the last seven years.

Gates

To be a part of the Lead to Win ecosystem, founders of a technology company must gain acceptance into: i) Day 1 of a

LESSONS LEARNED FROM LEAD TO WIN ECOSYSTEM

three day opportunity development program known as Phase II; ii) Day 4 of the second three days of the opportunity development program; and iii) Phase III.

Founders apply online by completing a form that provides information on the applicant and the applicant's business. Qualified applicants are invited to meet with one of various Lead to Win recruiting committees. At the first gate, founders are selected to be part of Phase II based on their experience, commitment, motivation, and the ecosystem's capability to add value to the founder of the startup. A startup can focus on the development and sale of technology, components, products, services and solutions.

In Phase II, founders participate in an intense six day opportunity development program where they harden and strengthen their opportunity. The first three days of Phase II emphasize development and clear articulation of customer and partner (ecosystem) value propositions. The second three days of Phase II focus on other aspects of entrepreneurship including financing, legal considerations, and attracting talent. External reviewers examine these opportunities on Day 3 and Day 6. Day 3 reviewers assess whether or not proponents of a business opportunity can: i) clearly articulate their customer and value propositions and the key differentiators for which customers are willing to pay and ii) are ready for Days 4-6. Day 6 reviewers assess the strength of the business opportunity and participant's readiness for Phase III.

Day 3 reviewers assess an opportunity in terms of three of the seven dimensions used by Day 6 reviewers. This means that being successful in Day 3 does not guarantee success in Day 6. While there is some overlap between the mix of Day 3 and Day 6 reviewers, the intent is to maximize reviewer diversity. The objective is for external reviewers with diverse experiences

to select the participants who move through two gates: i) move from day 3 to Days 4-6 and ii) move from Day 6 to Phase III.

In the third phase, a variety of incubation services are provided to participants to launch and grow their technology businesses.

Lessons Learned

We summarize the lessons learned about value co-creation within the Lead to Win program.

Lesson 1: In a business ecosystem, an agent engages in co-creation projects for the purpose of delivering value to its own customers, its partners, itself, and the keystone's customers. The Lead to Win ecosystem has four paying customers:

- one federal government program that supports small- and medium-sized enterprises in communities across Canada
- one Ontario municipality
- a business development organization in Ottawa
- a business development organization in Gatineau

When one of the 71 companies in the Lead to Win ecosystem engages in co-creation projects that result in new technology jobs and investment flowing into Canada's Capital Region, the company delivers value to the ecosystem's four customers.

Lesson 2: For a co-creation project to be considered successful, the four keystone customers and the project creators must derive greater benefits from the project than without it. Two dimensions are used to assess keystone customer benefits:

LESSONS LEARNED FROM LEAD TO WIN ECOSYSTEM

- the number of technology/knowledge jobs created in Canada’s Capital Region
- the amount of direct investment attracted to Canada’s Capital Region

These dimensions distinguish the ecosystem approach from other economic development initiatives that might be measured on the basis of seats-filled and sessions-delivered. The Lead to Win ecosystem is a response to demand and consequently is measured on the basis of realized benefits.

Each agent in the business ecosystem will use its own metrics to assess the benefits derived from co-creation projects.

Founders of startups in the Lead to Win ecosystem are known to measure benefits in terms of their capacity to sell to first customers, raise funds, and attract and retain talent. For these founders, attractive co-creation projects are those that:

- reduce time to cash
- increase the number, size and quality of opportunities in the deal flow pipeline

- reduce time to harden and strengthen a business opportunity
- decrease gaps between what they know and what they need to know to grow their business
- increase size and diversity of the network they use to obtain resources, reputation and expertise
- increase motivation and confidence

Lesson 3: Agents of different types can engage in co-production projects. A total of 115 organizations, including the four customers and 71 technology start-ups, are agents who collaborate in the Lead to Win ecosystem. Table 1 shows the breakdown of these organizations.

The organizations that can engage in co-creation projects are quite different from each other.

Lesson 4: In Lead to Win, individuals can undertake co-creation projects that produce:

- market offers

Table 1: Breakdown of Organizations in Lead to Win Ecosystem

	Number	Percentage
Technology startups	71	61.7
Medium and small technology companies	14	12.2
Service providers (lawyers, accounting, marketing, sales, human resources, space)	12	10.4
Capital providers	8	7.0
Academic institutions	4	3.5
Business development and advocacy organizations	3	2.6
Private research lab	1	0.9
Federal government program	1	0.9
Municipality	1	0.9
	115	100.0

LESSONS LEARNED FROM LEAD TO WIN ECOSYSTEM

- content
- skills, attitudes and goals
- quality relationships
- startups' assets (code, content, hardware designs) and business development collateral
- keystone's assets, best practices and business development collateral

While market offers are an important portion of outcomes co-created in an ecosystem, agents also can co-create requisite resources, processes and values.

Lesson 5: Agents co-produce resources, processes and values, not just market offers. Consider the case of the 12 service providers that are part of the Lead to Win ecosystem. Two are among the largest professional services firms in the world and among the four largest auditors in the world. A third is a local firm that provides similar services. These three firms collaborate with the other agents to launch and grow successful technology companies in Canada's Capital Region while at the same time compete to secure these technology companies as clients.

Similarly, take the case of the 7 capital suppliers engaged in Lead to Win. They also collaborate to launch strong technology companies while competing for their business.

Lesson 6: The most important source of the value of the outcomes from co-creation projects is the quality of the relationship among the creators. Individuals with strong relationships with each other co-create high value outcomes. It is extremely important to focus on the quality of the relationships of the people engaged in co-creation projects rather than just the features and characteristics of what is to be co-created.

Furthermore, the experience of recruiting startups for Lead to Win has demonstrated that relationships are far more effective in identifying superior candidates than advertising or other generic outreach mechanisms.

Lesson 7: The keystone, collaborative structure, market structure, members, and health enable and constrain co-creation projects. The role of the keystone staff in co-creation projects can't be overlooked. The keystone of the Lead to Win ecosystem is the Talent First Network (<http://www.talentfirstnetwork.org>), a Carleton University project funded by the Ministry of Research and Innovation (<http://www.mri.gov.on.ca>). Lead to Win must abide by all the rules set forth by Carleton University and the Ministry. These rules concurrently enable and constrain co-creation projects.

A set of interacting niches defines the collaborative structure of the Lead to Win ecosystem. A niche is a self organizing action group that performs a distinct function which i) addresses a need and ii) adds value to the overall ecosystem. A niche operates within the ecosystem's vision.

A niche can reflect a role or function, common element used in various target markets, and distinct attributes of a target market. The set of niches in the Lead to Win ecosystem that define the collaborative structure include:

Role or function: recruiters, startup founders, faculty and guest speakers, opportunity reviewers, service providers, and contractors

Common element: communications enabled applications, software application, content

LESSONS LEARNED FROM LEAD TO WIN ECOSYSTEM

Distinct attribute: language processing, mobile applications, applications for small and remote communities

An agent may be part of one or more niches and relationships are expected to evolve as agents move through their life cycle. All niches derive value from contributing to the ecosystem. Each niche links to other niches in the ecosystem. The strength of a link between two niches varies.

The market structure of the Lead to Win ecosystem is defined by global competitive markets. The ecosystem adjusts to the market realities of the companies that depend on it.

Members in the Lead to Win ecosystem are of two types: strategic and associates. Strategic members pay cash for the keystone to service the needs of the startup companies in the ecosystem. The strategic members of the Lead to Win ecosystem include seven organizations: the four keystone customers, the university where the keystone functions, and two small companies that contributed cash to the keystone.

Associate members include all organizations that make in-kind contributions to the co-creation activities of the ecosystem. While there are a variety of in-kind contributions, one critical aspect is supplying the talent to deliver the content of Phase II to the agents and to perform the Day 3 and Day 6 reviews.

The keystone headquartered at Carleton University is responsible for the health of the Lead to Win ecosystem. The following metrics are used to assess Lead to Win's health:

- number of technology jobs in Canada's Capital Region created by startups in the Lead to Win ecosystem

- amount of private and public investment raised by startups in the Lead to Win ecosystem
- number, diversity and rate of introduction of market offers
- amount of keystone's revenue
- number of new niches created

Lesson 8: New niches increase diversity in outcomes of co-creation projects. When a new niche is created in the Lead to Win ecosystem, it increases the variety of opportunities for the agents to co-create resources, processes and values. Variety of outcomes of co-creation projects also increases the ecosystem's ability to absorb external shocks and produce innovation.

Lesson 9: Outcomes of co-creation projects result from interactions of agents in a niche or agents in various niches. Outcomes of a co-creation project may map to a customer of an agent in the ecosystem, a specific function that is required to satisfy the needs of keystone customers, a common element found in various opportunities, advocacy interests of a segment of a group of agents, suppliers that address horizontal needs of customers in various target markets, and customers who purchase from suppliers that address different target markets.

A niche can be populated by agents that carry out co-creation projects to address the needs of a target market. In Lead to Win, various startup companies and service providers co-create assets and services to satisfy the needs of small and rural communities as well as municipal governments and health care organizations.

Lesson 10: Decreasing the number of co-creation projects in certain parts of the

LESSONS LEARNED FROM LEAD TO WIN ECOSYSTEM

ecosystem may enable new co-creation projects in other parts. While it is imperative that new types of co-creation projects arise, it is not imperative that old types of co-creation projects persist. The collapse of a large co-creation project may give rise to a variety of other co-creation projects.

Lesson 11: Facilitation of co-creation projects needs to be improved continuously. Facilitation of co-creation projects can become a source of competitive advantage for the ecosystem's agents. Just enabling co-creation is not enough. Knowledge of how to improve the resources, processes and values that enable effective co-creation projects is of critical importance.

Lesson 12: The customers of the outcomes of the co-creation project should always be engaged as creators. Each co-creation project has outcomes and these outcomes must benefit customers who are either internal or external to the ecosystem. To decrease the time to produce the outcome of a co-creation project and increase the value of this outcome, the customer of the outcome must be actively engaged in value creation.

In the Lead to Win ecosystem, particular attention is given to incorporate the customer of the outcome in co-creation projects.

Takeways

The key takeaways based on our five months of operating the keystone of the Lead to Win ecosystem are:

- co-creation projects are core to the health of the ecosystem
- co-creation projects must add value to creators and keystone customers

- outcomes of co-creation projects include: assets, skills, attitudes and goals, relationships, processes, and best practices
- outcomes of co-creation projects result from interactions among individuals that operate in one niche or across niches
- new niches increase the diversity of the outcomes from co-creation projects
- enabling co-creation projects is not good enough, we need to continuously improve the way we facilitate co-creation projects

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CO-CREATION AND INNOVATION MANAGEMENT

“ ... [We] challenge the traditional notion of value and its creation, namely, that firms create and exchange value with customers. We believe that, increasingly, the joint efforts of the consumer and the firms – the firm’s extended network and consumer communities together – are co-creating the value through personalized experiences that are unique to each individual customer. This proposition challenges the fundamental assumptions about the industrial system – assumptions about value itself, the value creation process, and the nature of the relationship between the firm and the consumer ... and reveals unprecedented opportunities for value creation and innovation.”

The Future of Competition: Co-creating Unique Value with Customers
<http://tinyurl.com/y99e8f4>

Value co-creation is an emerging concept in business, marketing and innovation management. Its growing interest points to the emergence of a new semantic wave in innovation research that requires the adoption of new terminology, frameworks and fields of research exploration. There is a number of existing research streams that provide a solid starting point in the discussion of different perspectives on co-creation. One key research aspect that needs to be further addressed is the potential benefits from the adoption of value co-creation practices and strategies.

This article shares insights from an attempt to position the value co-creation paradigm within an integrative vision for innovation management research and practices. This positioning is a challenging task as the meaning of the terms "value co-creation" and "integrative" innovation management need to be more fully clarified. We attempt to identify an appropriate plane of conceptual integrity that could be used to describe the innovation management field within the context of its relation to value co-creation.

The Changing Nature of Innovation

Over the last decade there has been a shift away from a purely product-centric thinking about the nature of innovation. Midgley (<http://www.theinnovationmanager.com>) identifies several important aspects of this ongoing shift:

1. A more holistic view of innovation as the total value offered to the customer.

In typical product-driven market offers, there are many elements, in addition to the product features, that are of equal or greater importance. These elements increasingly involve services which are built in or developed on top of the products and open new value dimensions to customers. For example, services providing more transparency in terms of multiple options-based pricing lead to higher customer confidence and become a valuable component of the overall customer experience. For example, Hotwire (<http://www.hotwire.com>) and Expedia (<http://www.expedia.com>) are two Internet platforms used to purchase airplane tickets, rent cars and book hotel rooms. In Hotwire, the customer can not see the name of the specific hotel before the final payment. As a result, Expedia is more successful in terms of customer market share.

2. Innovation is about finding the right combination of customer benefits.

In a world of customer activism, Internet connectivity, and communications, providing more benefits is not necessarily better. Too many or unnecessary benefits lead to higher pricing and to an exclusion of market segments that are not willing or able to pay. A thoughtful design of the combination of product benefits opens the possibility to provide value to new customer segments that do not need the full variety of available benefits and could become an opportunity for a low-end re-invention of a given product or service.

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3. Innovation may affect all of the constitutive dimensions of the business model. This aspect is associated with the nature of the specific business models used by firms to profit from the innovation. In other words, business modeling has become part of the innovation management field. The discussion of this third aspect is more holistic and requires a conceptual representation of what a business model is.

4. The successful management of innovations may include the innovation of management. Some types of innovations are different and radical enough to require the innovation of management tools and practices. This is associated with an entire reinvention of the way things are done at all company levels and could be highly impactful. New and innovative ways of management can produce dramatic shifts in competitive position and have allowed companies to go beyond the accepted levels of performance thresholds. Hamel (<http://harvardbusiness.org/product/the-why-what-and-how-of-management-innovation-hbr-/an/R0602C-PDF-ENG>) points out that it could create a long lasting advantage when it meets one or more of three conditions: i) it is based on a novel principle that challenges existing rigid management practices; ii) it is systemic and encompasses a range of processes and methods; and iii) it is part of an ongoing program of invention where changes and progress compound over time.

We adopt the framework suggested by Midgley and complement it with insights from Hamel to address the challenges associated with the innovation of management. We begin by introducing the key building blocks of value co-creation and integrative innovation management.

Defining Integrative Innovation Management

There are multiple perspectives that could be used to analyze the breadth and nature of different types of activities associated with the management of innovations. Even with a well defined preliminary understanding of these perspectives, it might be hard to find the common ground that could be used to go beyond a firm-centric, customer-centric or value chain-centric perspective. The field of innovation management is dynamic and in a continuously self-innovating mode, leading to the refinement of existing and the adoption of new concepts and frameworks. Many companies focus on the development of formalized routines and practices for managing innovations, but realize that some types of innovations are radical enough to require a reinvention of the existing management tools and practices.

An integrative view of innovation management can be addressed using at least three approaches: i) a process-oriented perspective (across); ii) a value network perspective (in-out); and iii) a cross-functional perspective.

The process oriented approach covers the variety of issues relevant to the multiple phases of the innovation process from early idea generation to market launch. This integrative perspective ensures that the entire variety of value creation activities is taken into consideration.

The value network perspective uncovers the nature of the activities, interactions, relationships, value contributions, motivations, and risks and benefits for all the actors involved, irrespective of the commitment and ownership of the contributions.

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The cross-functional approach is multidisciplinary and requires insights from engineering, natural sciences, management, and marketing. These insights uncover the different tensions and barriers as well as opportunities to fertilize innovation throughout the entire development process. The use of perspectives from technology management, psychology, sociology and marketing could develop a better understanding of customers' innovation adoption mechanisms. Business strategy and organization studies provide insights on how to think about customer value and suggest better ways for firms to organize to deliver value. Studies on team performance could provide new ideas for selecting, organizing and managing the project teams developing the innovative solutions. Marketing and technology help to understand how project innovation teams can get breakthrough innovation insights from customers. Organizational change studies have developed principles that could be used by firms to successfully transform into innovation-focused enterprises. Marketing and business economics provide perspectives on how to build and compete in new and emerging markets. The real challenge consists in bringing all this knowledge together into practical guidelines and tools.

The Integrative Aspects of Business Model Innovation

Christensen et al. (<http://harvardbusiness.org/product/reinventing-your-business-model/an/R0812C-PDF-ENG>) suggest that a successful business model comprises four components: i) a customer value proposition (CVP), describing the nature of the value that the company provides to customers; ii) a profit formula, describing the nature of the value that the company creates for itself, which includes the revenue model, cost structure, margin model, and resource velocity

at which inventory and other assets are turned over; iii) key resources, describing the nature of the key assets that are used to deliver the customer value, which includes people, technology, participation platforms, equipment, and brands; iv) key processes, describing how the value is delivered to customers, which includes training, development, manufacturing, sales, and services.

One key point is that the terms “profit formula” and “business model” are not interchangeable since the way a company makes profit is only one component of the business model. Another key point is the identification of the resource elements that create value for the customer, the company, and its partners, including the way those elements interact. The constituent components of a business model are defined within the context of an integrated value creation process. The power of this model lies in the complex interdependencies as major changes to any of these four elements affect the whole value creation system. Successful businesses devise a stable value creation environment in which these elements bond to one another in consistent and complementary ways.

The role of technology can be twofold: as part of the technological products and services themselves, but also as part of the technological platforms enabling particular business processes. Chesbrough and Rosenbloom (<http://icc.oxfordjournals.org/cgi/content/abstract/11/3/529>) and Chesbrough (<http://books.google.ca/books?id=-f4XSIN37coC>) identify six key functions of a business model within the context of technology-driven businesses:

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- 1. Articulating the value proposition:** the value created for users by a market offering based on a given technology.
- 2. Identifying the market segment:** the users to whom the offering or the technology are useful and for what purpose.
- 3. Defining the structure of the value chain:** within the firm required to create and distribute the offering.
- 4. Estimating the cost structure and profit potential:** of producing the offering, given the value proposition and value chain structure chosen.
- 5. Describing the positioning:** of the firm within the value network linking partners, suppliers and customers, including identification of potential complementors and competitors.
- 6. Formulating the competitive strategy:** by which the innovating firm will gain and hold advantage over rivals.

Chesbrough extends the above definition to define open business models (<http://www.blogcatalog.com/search.frame.php?term=henry+chesbrough&id=27fa80d532d0830e5fc145d234d3e210>).

Business model openness relates to the boundaries of an organization and its multiple transactions with external actors engaging in the value creation process. It also includes the transactions with customers and users in their role as providers of ideas and as co-developers, testers or distributors. One of the key insights of this business model definition is the distinction between a specific value chain and a value network as two different functions of the business model. This distinction sees the value network as a web of potential value chain configurations that could be actualized depending on customer demand.

Business model definitions include a whole set of integrated components, all of which provide potential opportunities for innovation and competitive advantage. The management of innovations at the business model level requires the study of the individual components and how they work together in a holistic way. This may include a complete repositioning of an existing product or service to serve unmet or unsatisfied customer needs, or creatively reconfiguring the interaction dynamics of the value network to enable a new and unconventional product or service delivery system. A fundamental understanding of the nature, diversity, dynamics and quality of the interactions between the different actors in the value creation process is key to the business innovation success of any company.

How relevant is business model innovation? According to a recent study (<http://www-935.ibm.com/services/us/index.ws/ibvstudy/gbs/a1025350?cntxtId=a1000043>), business model innovation, across all industries, shows the strongest correlation with operating margin growth. When a firm changes several aspects of its business model, that business model innovation is hard for competitors to duplicate and the company can benefit from significant growth and increasing profitability. Business model innovation could very well become the only way to deal with the discontinuous pace of change.

A Value Co-creation Framework

Value co-creation is associated with the opportunity to gain competitive advantage by developing unique competences, together with the appropriate organizational resources and technological capabilities, aiming at better satisfying customers' demands for personalized products, services and experiences.

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We use the value co-creation framework suggested by Prahalad and Ramaswamy in *The Future of Competition: Co-creating Unique Value with Customers*. This framework has been found efficient, broad and profound enough to cover the multiple aspects of value co-creation.

Prahalad and Ramaswamy suggest describing value co-creation by means of four building blocks which comprise the DART framework:

Dialogue: at multiple points and with multiple partners within the value network encourages knowledge sharing and a mutual understanding between companies, their partners and customers. This provides an opportunity for customers to interject their view of value into the value creation process. It helps companies understand the emotional, social, and cultural contexts that shape consumer experiences and provides knowledge the companies can use to innovate. To initiate dialogue during co-creation requires a forum with clear rules of engagement that make for an orderly, productive interaction within emerging thematic communities.

Access: challenges the notions of openness and ownership. Providing customer access to resources, information, tools, assets and processes at multiple points across the value network provides companies with new business opportunities and expands the company's view of new potential markets.

Risk: as customers become co-creators of value, they become more vulnerable to risk and will start demanding more information about the potential risks associated with the design, manufacturing, delivery and consumption of particular goods and services. Where good information is available, consumers, within the limits of their technical knowledge, should be able

to make more informed choices. Proactive risk communication and management offers new opportunities for differentiation.

Transparency: is required to create the trust between institutions and individuals. Companies traditionally benefited from information asymmetry but this is no longer the case. When companies make vital business process information visible to consumers, they hand over part of the control of the value creation process to customers even before the traditional end-point of exchange. Transparency is increasingly becoming a component in differentiation strategies.

The DART framework provides a good starting point for discussing the key features of value co-creation platforms. However, the framework needs to be further refined to include the opportunities for personalized co-creation experiences and their dimensions of choice. Prahalad and Ramaswamy identify four dimensions of choice.

1. Co-creation across multiple channels: the choice of interaction channels by both customers and firms significantly shapes the nature of the co-creation experiences. Therefore, the co-creation experience should be actualized across multiple channels.

2. Co-creation through options: consumers want to define choices in a manner that reflects their own view of value. The company's view of choices limits personalization because the company is designing options that fit its value chain in terms of profitability. Providing multiple options to customers to build their own combination of product features is not the end of the co-creation exercise. Enabling the possibility for customers to create their own options is another level of co-creation which opens the door for user-driven innovation.

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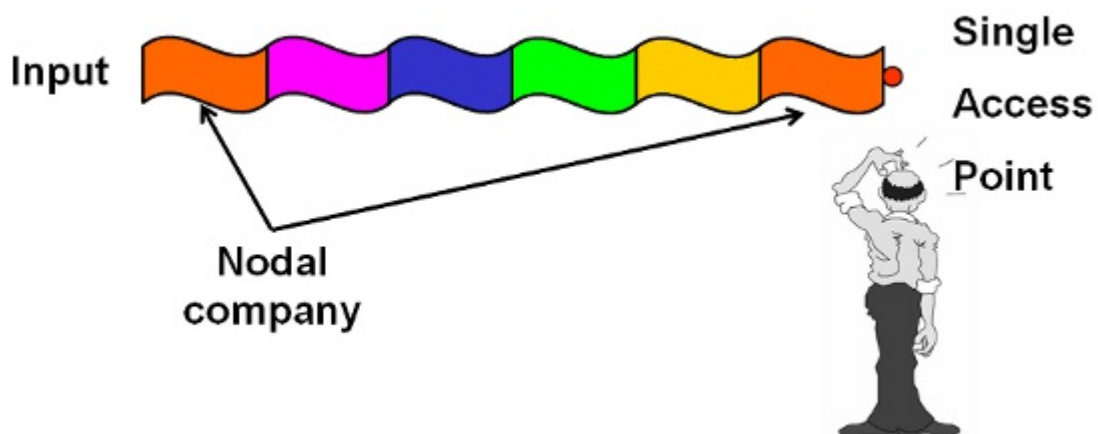
3. Co-creation through transactions: consumers want to interact in their preferred language and style and firms should focus on enriching the co-creation experience through multiple transactions. Variety in transactions enables a choice of experiences such as in-store purchases, customer self-service, and Internet banking. Multiple transactions at multiple points of access enable people to express their personal views, to affect the way a product or service is designed, to reject unnecessary features, to negotiate a particular price component, or decide to get engaged in the value creation process. For the company, transactional efficiency leads to cost reduction, which leads to more captured value. For the customer, transactional modularity, ease and openness leads to trust and opens the opportunity for personalization based on a flexible price-experience relationship.

4. Co-creation through the ability to influence the relationship between price and experience: customers associate choice with the ability to become part of the type of experiences they are willing to pay for. They want the price of these experiences to be fair. Co-creation is not about cheaper product and services; it is about the fit between what a customer wants and how much they willing to pay. The possibility for this fit is key to the understanding of value co-creation and its impact on market development and profitability.

Designing Value Co-creation Platforms

Applying the DART framework requires a re-conceptualization of the common sequential understanding of the value chain into a complex and dynamic network of value-producing relations between producers, suppliers and consumers. Figure 1 demonstrates that the traditional linear value chain model is a sequence of business functions to be filled by a proper selection of the right partners.

Figure 1: Traditional Linear Value Chain Model



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The traditional linear view of the value chain focuses on the design and optimization of a minimized number of business functions. This typically results in a single access point of exchange where customers select between a number of product or service options based on a company's view of value and price. This view emphasizes the need for companies to identify and cooperate with the right partners and suppliers in making the value chain output predictable, manageable and repeatable. It is based on simplistic product-centric business models focusing on the development of the right combinations of features that would make a product or service most attractive to customers as compared to competitive alternatives. The company becomes knowledgeable about customer needs and preferences by means of market research, ethnographic studies, and expert views. The company could involve lead users at the early stages of development but, once the product is developed, it is targeted at all customers. No matter how good the company is in guessing, learning, or manipulating customer needs and preferences, the linear model works within the context of a "one product fits all" philosophy. The fundamental assumption is that value is built in products or services developed by the company for the customers. A key component is that companies create value by assigning features in the anticipation that this will make the products and services likable to the largest possible group of target customers. Customers have no access to the internal dynamics of the value chain and are left with a 'yes' or 'no' choice. It pre-defines the main operational concerns to optimization of the value chain, customer demand management, product and technology innovation, product diversity and support.

Some scholars define this way of doing business as driven by a Newtonian or mechanistic view of the world. In this

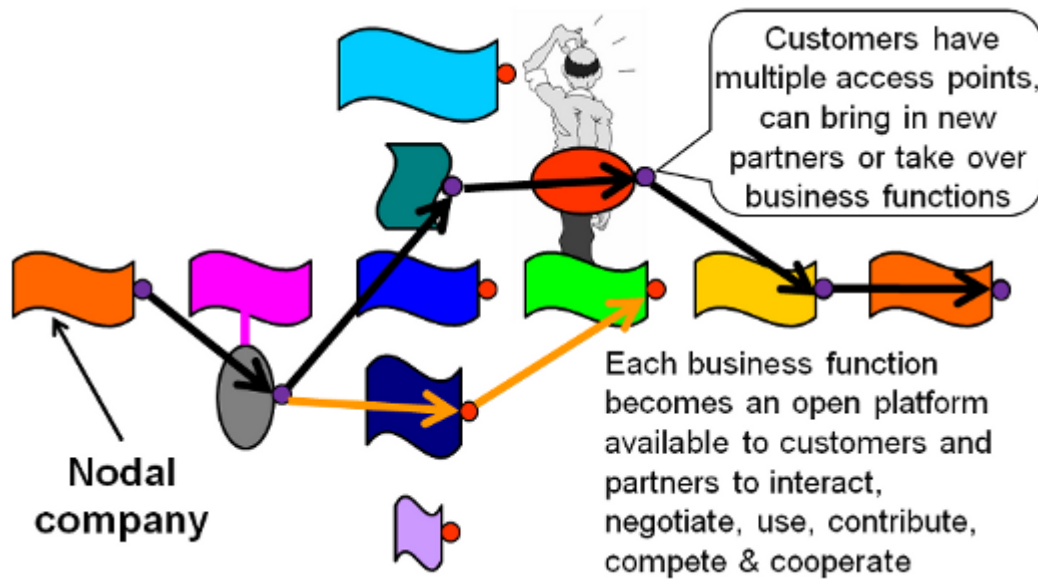
value creation model, goods are embedded with value, produced away from the market or consumer, and sold through the manipulation of marketing-mix decisions that maximize firm profit. Customers are cut out of any opportunities to become part of the innovation process. The customer-centric motives of such a model are highly questionable.

Using similar terminology, the 'quantum physics view' occurs when companies move away from a company- and product-centric view and embrace platform oriented thinking. They engage in a fundamental shift from the idea of developing the best products and services to satisfy what they perceive as being critical customer needs to providing a participation platform for customers, partners and suppliers to cooperate and jointly co-create value. This shift fundamentally affects the understanding of the value chain and implies a shift to a new model which is open, non-linear, operationally parallel, and three dimensional. A visual representation of this platform is seen in Figure 2. The shift from a one to a three dimensional model is associated with a transformation into dynamic customer-driven value nets, constellations, or networks.

According to Raimo van der Klein (<http://marikaya.wordpress.com>), this transformation could be described in a number of steps. The first step is to clearly identify and modularize the business functions which constitute the generic building blocks of the initial linear value chain. While the emerging business modules should be clearly visible and distinguishable in the eyes of the customers, they should be experientially different. The second step consists in creating a choice of options for the modularized business functions.

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Figure 2: Visual Representation of a Value Co-creation Platform



To do this, a company should extend its value chain into a network by finding multiple partners or suppliers that are able to add a degree of perceptible differentiation to a business function. The differentiation could be based on volume capacity, higher quality, lower cost, speed of delivery, or design flexibility, and should be clearly visible to customers. The third step consists in providing access points to each of the existing business modules within the newly extended value network.

The presence of multiple access points to all business function module partners transforms the extended value network into an open participation platform. It enables customers to dialogue, negotiate and make their own choice about who will be the provider of a specific sub-component of the product or service. Customer demand is the ultimate driver of a specific value chain trajectory out of the multiple configurations that are potentially available within the extended value network. In such a model, the specific features of the final market offer are not known in advance and depend upon each customer's preferences.

Every actualization of a specific market offer is a potentially new creation. This differs from the traditional value creation model where market offers are pre-designed and are the same for all potential customers. The key difference is the shift to a customer-driven and creative business model.

The characteristics of such a "quantum mechanical" model can be summarized as follows: i) there is an uncertainty principle at operation since the specific value chain trajectory is not known in advance; ii) there is a complementarity principle at operation since the output of a particular value chain configuration could be considered in two different and complementary ways: as an end product or solution or as a platform with a focus on the critical role of its network or partnership enabled value component; iii) the power of a value co-creation platform is determined by summing all potential value path configurations when calculating the probability for a given value output; iv) the role of the observer (the customer) is critical to the specific nature of the final outcome of the interaction; v) every value network partner is in a position to creat-

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ively affect the particular structure and functioning of the final value output; and vi) there is a place for the manifestation of non-local phenomena such as network knowledge and collective wisdom that provides an additional value dimension and that could potentially make a value co-creation platform more competitive.

Traditional vs. Emerging Value Creation Model

We now summarize some of the differences between traditional and emerging value creation models. The focus of co-creation is on personalization and not on customization. Options in a value co-creation platform include not only a choice of product features but also a choice of value chain partners and the possibility to become actively engaged in the value creation process as a co-producer, co-designer or co-developer. The choices in value co-creation are associated with customer or user driven innovation. In the traditional value creation model, lead users are not end users. A lead user's insight about a particular new product or service may be important in terms of innovation but, once the product or service is designed and developed, it becomes one product for all customers. In this sense, the lead user operates within the framework of the traditional value creation paradigm. The value co-creation approach multiplies opportunities to provide a platform for a systematic involvement of lead users.

An Integrative Vision for Innovation Management

How does value co-creation fit into an integrative vision for innovation management by addressing the current challenges associated with the changing nature of innovation? The section below will provide a discussion of each of the challenges previously identified.

1. Value co-creation is about the total value offered to the customer. The first challenge is the shift from product-centric innovation to a more holistic approach that includes services. Value co-creation deals with a shift from products to platforms that include all the services needed to enable the participation of all the value network actors. One of the key research streams dealing with co-creation is the Service-Dominant Logic (SDL) approach to marketing where services, and not products, are considered as the main source of value. With SDL, products are just vehicles of value delivery and a product-centric view of marketing distorts the true nature of value creation. Customers are co-producers of services and value because they mobilize knowledge about the service process that affects the success of a value proposition. The study of platform architectures for service delivery is in line with value co-creation research. The danger is to miss the platform focus and look at co-creation platforms from a service perspective only. Value co-creation is about the design of participation platforms enabling seamless integration between products, services and experiences.

2. Value co-creation enables customers to get the right combination of customer benefits. The second innovation challenge is in providing the right combination of benefits to customers. Value co-creation platforms transform the problem into an opportunity by getting out of the guessing game and letting customers personalize the product or service. This approach is radical and provides a completely new way to look at marketing. Value co-creation platforms are participative by nature and provide a new type of value based on participation.

3. Value co-creation affects all of the constitutive dimensions of the business model. The third innovation challenge

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was associated with the fact that innovation includes all the building blocks of the business model and not just the particular characteristics of the market offer. The value co-creation paradigm changes the entire dynamics between the usual business constituencies, making every actor a source of new value for customers. A more detailed study of value co-creation business models should become an important subject of future research.

4. Value co-creation requires the innovation of management. The fourth innovation challenge was the need for the innovation of management itself. In value co-creation platforms, the focus shifts from product innovation and value chain management to the design of interactive experience environments. This focus makes it necessary for managers to experience and understand the business as customers do. Managers should engage in new types of practices that: i) provide as much real-time event-centric data as possible regarding the total customer experience; ii) understand and intervene in customer events as they manage the entire overall operation; and iii) respond quickly by mobilizing and re-configuring resources as needed.

These new management practices cannot be considered apart from the technological infrastructures and business processes underlying the operation of the value co-creation platform. They require a complete reconsideration of how a company operates and cannot be approached within the context of a traditional value creation system. This is the main reason for the resistance of many of today's managers to embrace value co-creation. Value co-creation is not efficient when using a traditional value creation process. It needs to be considered within the context of a new integrative vision for the management of innovations and for the innovation of management.

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SOCIAL VISION FOR VALUE CO-CREATION IN DESIGN

"We are not seats or eyeballs or end users or consumers. We are human beings - and our reach exceeds our grasp. Deal with it."

The Cluetrain Manifesto
<http://www.cluetrain.com>

The Cluetrain Manifesto was introduced in 1999, calling for a “powerful global conversation” between companies and the people they serve. Since then, the conversation has started and is finally gaining momentum. Co-creation is the buzzword of the day to describe the various types of conversations that are taking place. But the conversation can be applied to multiple domains ranging from sales tactics and branding contests to strategic, human-centered means of affecting social transformation.

In this article we articulate a vision for value co-creation by focusing on its social aspects. We organize the seemingly disparate applications, comparing the mindset, goals and results of three types of value co-creation: monetary, use/experience and social. Although these three types of value co-creation are all relevant, we believe that the social type of value provides a real opportunity for significant change. However, the rules of engagement for this type of co-creation are particularly challenging. Participation must be face-to-face to allow for real-time interaction to take place. Empathy for the people who will be affected by change is key. Visualization of the collective assets is essential. And having the appropriate mindset about co-creation is the single most important component for success.

What are Co-creation and Co-design?

Co-creation is a very broad term with a broad range of applications. We define co-creation as any act of collective creativity that is experienced jointly by two or more people. How is co-creation different from collaboration? It is a special case of collaboration where the intent is to create something that is not known in advance. The concept of co-design is directly related to co-creation. By co-design we refer to collective creativity as it is applied across the whole span of a design process. By these definitions, co-design is a specific instance of co-creation.

We see many different types of co-creation happening today, including:

- co-creation within communities
- co-creation inside companies and organizations
- co-creation between companies and their business partners
- co-creation between companies and the people they serve, who are variously called customers, consumers, users or end-users

We focus on the type of co-creation that occurs between companies and the people that they serve. This is the type of relationship and conversation that the authors of the Cluetrain Manifesto were addressing.

What is Value?

Value is a multidimensional concept with a range of meanings. Value can refer to rank, importance, material or monetary worth, power, or usefulness. Values also refer to one’s judgment of what is important in life.

SOCIAL VISION FOR VALUE CO-CREATION IN DESIGN

From a business perspective, a value chain refers to all the functions and activities an organization needs to undertake in order to create or add value to its products or services. Value co-creation refers to one or more form(s) of value(s) produced through the collective creativity of people.

Why do People Create?

Central to the concept of co-creation is the belief that all people are creative and seek outlets for creativity in their lives. People today have been inundated with many ways to satisfy their consumptive needs while their creative needs have been usually ignored (http://maketools.com/pdfs/InformationInspirationandCo-creation_Sanders_05.pdf).

People are increasingly seeking outlets for their creativity. This activity can be observed most readily online in the form of user-generated content that appears on YouTube.com, Facebook.com and Etsy.com. It is also seen in the growth of the crafts and hobbies industries, and the growth of the “big box” do-it-yourself chains such as Home Depot. One of the key values of value co-creation is that it satisfies the need for creative activity while addressing the need for social interaction.

Creativity is a challenging concept. We describe four levels of creativity. Individuals differ in the level of creativity they attain in different domains. In fact, they may find themselves at all four levels of creativity simultaneously in different domains. Being creative can result from activities at any or all four levels of creativity.

The most basic level of creativity is doing, or accomplishing something through productive activity.

For some people, washing and folding clean clothes makes them feel creative and they would miss this level of hands-on doing if they became incapacitated. The next level of creativity, 'adapting', is more advanced. The motivation behind adapting is to make something one's own by changing it in some way. Someone might do this to personalize an object so that it better fits their personality. Or they might adapt a product so that it better fits their functional needs. For example, a person could feel creative in the act of shortening a pair of pants or adding a patch. The third level of creativity is 'making'. The motivation behind making is to use one's hands and mind to make or build something that did not exist before. There is usually some kind of guidance involved such as a pattern, a recipe, or notes that describe what types of materials to use and how to put them together. The most advanced level of creativity is 'creating'. The motivation behind creating is to express oneself or to innovate. A person will certainly feel creative in designing and making a one-of-a-kind item.

The four levels of creativity are being manifested in collective formats such as publications and websites. At MAKE (<http://www.makezine.com>), people share patterns and instructions they have created with others.

New trends in technology have helped to democratize creativity and support broad audiences who participate in design, at many levels. Examples include elementary schools that teach courses integrating Google Maps and the drawing program SketchUp (<http://sketchup.google.com>). This allows students to evaluate geographical locations, terrain information, weather patterns and localized business development and then draw and annotate directly on the maps to illustrate possible solutions to class assignments.

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The iPhone offers opportunities for co-creation with applications that support various creative and design activities. One example would be the iPhone application Brushes (<http://brushesapp.com>), which provides a powerful tool for creating original artwork and animation on your mobile device that can then be sent to others. In another example, a physical therapist, while working with an architect on a new therapy clinic, used an iPhone application to plan and design what she thought the department should contain. In real time she could describe not only the equipment but also the layout of the equipment in the space – all to scale, printable, annotated, and electronically delivered to the design team.

The Types of Value in Co-creation

There are at least three types of value in co-creative activities and relationships: monetary, use/experience and social. We will describe them as separate entities.

Monetary Value

In *The Brand Gap: How to Bridge the Distance Between Business Strategy and Design* (<http://twosoups.com/book/0735713308>), Tom Peters was quoted by Marty Neumeier as saying: "There is an old saying in business, what gets measured, gets done". The monetary value of co-creation is the one that usually receives the most attention in business circles. Co-creation that results in monetary value is fueled by the desire to make money in new ways, more efficient ways, or in ways that provide sustainable revenues over longer periods of time. Economic value is a quantitative proposition and based on relatively short-term needs.

Further, it is mostly based on transactional metrics of exchange between what the company offers and what the customer consumes and/or experiences.

Co-creation associated with monetary value may not require direct contact between the company and the its customers because the conversation can be mediated by tools of information and communication. This can be seen in web-based surveys that ask consumers to select features of choice or the crowd-sourcing of large numbers of respondents.

Use or Experience Value

In *Co-creation experiences: The next practice in value creation*, C.K. Prahalad and V. Ramaswamy noted that "The meaning of value and the process of value creation are rapidly shifting from a product- and firm-centric view to personalized consumer experiences" (<http://citeulike.org/user/Rohrbeck/article/1574432>). The Dornbirn Manifesto states that "The users-producers-participants are creating direct use value, videos in YouTube, knowledge and software in the case of commons-oriented projects. This use value is put in the common pool, freely usable, and therefore, does not consist of scarce products for which pricing can be demanded. The sharing platforms live from selling the derivative attention created, not the use value itself" (http://p2pfoundation.net/Dornbirn_Manifesto).

The use/experience value of co-creation is fueled by companies' desires to transform consumers into users so that the products and services they design, produce and sell will better meet people's wants and needs. One could argue that this is directly related to monetary value, but this value extends beyond monetary gain.

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The experience value of co-creation applies not only to products and services, but also to brands and branded environments. There is a new attitude that a brand is really an emotional connection (<http://lovemarks.com/index.php?pageID=20021>), built fundamentally on trust, and a gauge of how invested a customer feels about a company's product/service. A charismatic brand (<http://charismatic-brands.com/charismaticbrands3.html>) develops an allegiance whereby followers are concerned and invested in not only the brand's survival but also its growth. Followers are willing to get involved in making these brands stable and successful.

Social Value

Eero Saarinen (http://en.wikipedia.org/wiki/Eero_Saarinen) reminds us to “Always design a thing by considering its next larger context — a chair in a room, a room in a house, a house in an environment, an environment in a city plan”.

The social value of co-creation is fueled by aspirations for longer term, humanistic, and more sustainable ways of living. It supports the exploration of open-ended questions such as “how can we improve the quality of life for people living with a chronic illness?” When working within this context, one does not generally have preconceived notions of the outcome since determination of the form of the outcome is part of the challenge. Co-creation of this type involves the integration of experts and everyday people working closely together. Rapid prototyping and collective visualization of ideas and opportunities can enhance their collective creativity. Direct personal involvement between people is needed for this type of co-creation.

Multiple divergent points of view need to be expressed, listened to and discussed. Empathy between co-creators is essential. Although social networks may be used to help identify and locate the participants, the real work in this form of co-creation favours more personal interactions and conversations.

All three types of value in co-creation are important to understand and develop, and are at times inextricably linked. Social value can provide use/experience value as well as financial reward. Table 1 compares the three types of value co-creation by emphasizing their differences.

About the Design Process

Co-creation activities and relationships can happen throughout the different stages of the design process:

- pre-design: where innovation and opportunity development take place
- design research and/or discovery: where research and translation to design occur
- design: where exploration, design, and development take place
- marketing, sales and/or distribution: where implementation, roll-out and sales occur
- after sales: where product use and service experience take place

The pre-design phase, also referred to as the “fuzzy front end” because of its ambiguous and chaotic nature, describes the many activities that take place in order to inform and inspire the exploration of open-ended questions. In the fuzzy front end, it is often not known whether the deliverable of the design process will be a product, a service, an interface, or

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Table 1: Comparison of Three Types of Value Co-creation

CO-CREATION OF VALUE	Objectives	Mindset	How people are seen	Deliverables	Timeframe
Monetary	Production	Business	Customers	Marketplace results	Short-term
	Consumption	Commercial	Consumers	Business advancement	
	Maximization of shareholder wealth	Economic		Products that sell	
Use/Experience	Positive experiences	Experience-driven	End-users	Products and services that people need and want	From life-stage to lifetime
	Personalization	Service orientation	Empowered consumers		Long-term
	Customization				
Societal	Improve quality of life	Human-centered Ecological	Partners Participants	Transformation Ownership	Over many generations
	Sustainability		Owners	Learning Behavior change Happiness Survival	Longer-term

something else. The goal of this exploration is to define the fundamental problems and opportunities and to determine what is to be, or should not be, designed and manufactured.

Where in the Design Process does Co-creation Happen?

An interesting pattern emerges when the types of value intersect the different stages of the design process at which co-creation occurs. Value co-creation with a focus on monetary objectives is more likely to take place later in the design development process, in the design adoption stages such as marketing, sales and distribution. Value co-creation of the use/experience variety tends to take place during the design process, including in the discovery stage.

And social value co-creation is most likely to occur in the very early front end in the pre-design portion of the design process. Table 2 provides some examples of co-creation occurring at different stages of the design process. The websites for the starred items are in the Recommended Resources section of this article.

The earlier in the design development process that co-creation occurs, the greater and broader the likely impact. Social value co-creation tends to start at the very early front end, well before any specific concept definition and/or exploration. Unfortunately, design and designers are not usually involved this early in the process. Any user/consumer/customer information is most often based on past experience and metrics.

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Table 2: Co-creation and the Design Process

CO-CREATION OF VALUE	Pre-design	Discover	Design	Marketing and Sales	After Sales
Monetary			Nikeid	IKEA Dell Ideastorm* MyStarbucks Frito-Lay	
Use/Experience		Riversimple*	Mini Cooper Threadless	Scion Converse (red)*	
Societal	Aid to Artisans*	Tom's Shoes* Red Cross CDC	Aid to Artisans Rural Studio* Social Designer*		

This phase is conventionally held closed by the business entity and this is where the vision and definition is set for what the company experts think should be developed. Moving co-creation from the company to the people it serves into these front end efforts will most likely produce the largest benefit in terms of social value. Although use/experience value and monetary value may follow, it is often not visible at this stage in terms of a business value proposition. The Acumen Fund (<http://www.acumenfund.org>), which identifies large social issues such as poverty, water shortage, and the spread of disease, involves people to solve their own problems, in the context of their culture and location. Small amounts of monetary investments are made, and guidance is provided.

Many of these efforts have had far reaching results, some have become larger businesses, and most are highly sustainable due to the localized stakeholder ownership.

Meaningful conversations associated with the social value of co-creation are more about people's needs and inspirations than transactions based on consumption or business needs. At this level, co-creation creates a dialogue and conversation that may uncover what others did not perceive as a need or opportunity, did not understand as a problem, or did not understand how to address. Examples could include our national dilemma of obesity and diabetes, homelessness, or debt.

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As we further develop the mindset required for social value co-creation, we see an interesting side benefit to co-creation. In the example of obesity, a co-creation process educates simply through involvement. During participation, the obese as well as their healthcare providers, get smarter, gain insights to the problem, learn how to develop frameworks to address their issues, and develop higher levels of motivation to succeed and improve the situation.

Aid to Artisans (<http://aidtoartisans.org>) focuses on the synergistic integration of a first world culture partnered with a third world culture. Aid to Artisans matches a designer to a small community with the goal of designing and producing products that create value beyond the immediate region of the producer. The shared and expanded knowledge developed through immersive time together, combined with a broader world view and distribution opportunities, leads to products that can sustain villages beyond their current capabilities.

Implications for the Future

In *Problem Seeking: An Architectural Programming Primer* (<http://books.google.ca/books?id=IPaGYL0twE8C>), William Peña noted that “You cannot solve a social problem with an architectural solution”. In a world that is constantly changing at ever increasing rates, we cannot episodically understand the world. This is especially important when one is engaged in long-term development projects such as architecture, and where projects require the merging of industries that operate and evolve at varying rates. Think of the speed of change of architecture versus communication technologies, or developing strategies for sustaining communities in third world environments.

The shift for companies in seeing their objective change from designing for people to co-creation is profound. It takes many years for the mindset and practices of co-creation between companies and people to permeate and change an organization. Organizational barriers often stand in the way and without support at the highest of levels within the organization, the shift is not likely to occur.

There are a number of prerequisites that are needed to support and open the stage for the practice of co-creation with implications for social transformation:

- the belief that all people are creative and will participate in a creative process if they are motivated and are provided the tools to do so
- diversity is a key driver: if all participants are of the same background, perspective, and opinion, the outcome may be limited and even predictable
- joint problem definition, not just joint problem solving, is the driver in the fuzzy front end of the design process
- continuous dialogue and conversation, in conjunction with workshops, that involve a broad range of stakeholders are needed
- the exploration and use of design tools, materials and methods that put all the players on a common ground is needed
- there is a focus on experiences, not just on products and services
- there is a focus on the whole of an experience, not just an episode or single touchpoint

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Conclusions

Co-creation puts tools for communication and creativity in the hands of the people who will benefit directly from the results. We have discussed a social vision about the different types of value in co-creation and the place within the design process that best supports them. Our goal has been to focus on social value through co-creation in order to stimulate interest and provoke conversation and action. Contact the authors if you want to continue this conversation.

Liz Sanders is the President of MakeTools, a company that explores new spaces in the emerging design research landscape. She is a visionary in participatory design practices, having introduced many of the tools, techniques and methods being used today to drive and/or inspire design from a human-centered perspective. Liz has practiced across all the design disciplines. Her current focus is on bringing co-creation and human-centered design thinking to the planning and architectural design process. Liz offers learning experiences in co-creation and innovation for clients, colleagues and students around the world. She has a Ph.D. in Experimental Psychology and a B.A. in both Psychology and in Anthropology.

George Simons has a long and diverse career spanning the arenas of environmental and industrial design, applied design research and innovation strategies. At the core of his work is the ongoing passion for integrating different design and research disciplines with complex design problems and the needs of business. During his career he has held positions as the Director of the Advanced Concepts Research and Design Group at Steelcase, started and managed his own design and strategy consultancy, fahrenheit, and after that was a managing partner and location lead at IDEO. George's work has been widely published, exhibited in museums, and received numerous awards. He is listed on over 40 patents.

Recommended Resources

SocialDesignSite

<http://www.socialdesignsite.com>

The Co-Creation Effect

<http://www.francisgouillart.com>

Mass Customization & Open Innovation News

http://mass-customization.blogs.com/mass_customization_open_i/

Riversimple

<http://www.youtube.com/watch?v=iAfhDB0CDr4>

Tom's Shoes

<http://www.tomsshoes.com/>

Rural Studio

<http://www.cadc.auburn.edu/soa/rural-studio/>

Socialdesigner

<http://www.socialdesigner.com>

Dell Ideastorm

<http://www.ideastorm.com/>

Converse

<http://www.converse.com/#/products/shoes/red>

MOTIVATING CO-CREATED INNOVATION

“By successfully managing value co-creation and exchange, companies can seek to maximize the lifetime value of desirable customer segments.”

Managing the Co-creation of Value

Today's profit orientation forces companies to focus on their core competencies while providing customers with multiple new offerings. To meet these two requirements, companies need to develop innovations in collaboration with different stakeholders including suppliers, customers, and users. While managers and researchers discuss the benefits derived from the process of co-creating innovations, little is known about what motivates different stakeholders to engage in the co-creation of innovations. The purpose of this article is to highlight the first results of a qualitative study that focuses on the different types of value stakeholders can expect from co-creating innovations.

Introduction

In the current economic crisis, many companies find themselves in a financial struggle. While some companies have gone bankrupt, others have realized possibilities for change and future growth. In these critical times, managers are looking for and applying strategies that are both successful in the short term and are sustainable for a longer time horizon. Two well-known strategies are:

- outsourcing business functions that do not belong to the core competencies of the company
- outsourcing production to countries with lower wages in order to significantly reduce cost and stay globally competitive

In the past, these two strategies have proven to be successful in contributing to the sustainability and growth of many companies. Due to the fact that during the past 20 years many companies focused on economization, many non-core business functions have already been outsourced. Thus, this strategy is practically not available for many companies. Also, there are examples of multinational companies that have demonstrated the success or unsuccess of outsourcing production. For instance, Andreas Stihl AG & Co. KG, the world market leader in the motor saw industry, decided to build a new production plant in China to reduce production costs in 2006. At the beginning this strategy went well, but after a relatively short production period in China, the number of plagiarized low quality motor saws available on the market increased. Thus, the reputation of Stihl high quality motor saws declined. However, due to the high competition in this market, Stihl needs to keep its production in China and has to find ways to deal effectively with this problem.

Co-creation as Part of a Business Strategy

It is often emphasized that the key to enduring a crisis does not lie in cost reduction alone. It is important for companies to focus on innovation development. Some companies recognize the innovative capability of the different stakeholders (suppliers, customers, and users) involved in their value chain. Within this context, the value of co-creation is emphasized. But what is co-creation? Is it an old practice that is now stressed by academics as important within the current economic context? Or, is it a new and innovative way that shows companies a new possibility to overcome the economic crisis and to boost their performance for the future?

MOTIVATING CO-CREATED INNOVATION

Co-creation is not totally new and a number of companies have been using the rudiments of co-creation for many years. One example for the early implementation of co-creation is IKEA, the Swedish home furniture retailer. The success of the business idea of IKEA is simple and well known:

- produce high quality furniture by sourcing components worldwide
- match the creative capabilities of the different participants more efficiently and effectively

Particularly, the second part of IKEA's business strategy can be understood as co-creation. IKEA offers its customers high-quality products for a favourable price. It also enables them to take over some key tasks that are traditionally done by the manufacturer: the final assembly of the furniture. Enabling customers to take over specific tasks in order to contribute value is a key to understanding the value of co-creation. Implementing a co-creation strategy is not always easy and requires a good product offering from the company. Companies need to make their customers aware that taking over some key tasks increases their benefit. It is only when the benefits to customers are well articulated, visible, and measurable that a value co-creation approach can become part of a successful and promising business strategy.

Another example of co-creation is the development of Linux. In contrast to the top down approach of the IKEA example, some computer users realized the need for the innovation of an alternative operating system. A group of users started to develop a new operating system by freely sharing the source code. The success story of Linux became an example for further open source developments in the information technology sector. It can also be argued that the unprecedented

advancements of Internet networking and communication technologies have opened new ways for collaborative value creation and innovation.

Value co-creation changes the understanding of the different roles of the stakeholders involved in the development of new products and services. This new understanding necessarily affects the way we think about innovation development. Taking into consideration and successfully managing the value contributions by all relevant stakeholders is becoming highly important. Companies have realized that developing successful innovations based on their own resources is costly and often does not lead to the type of innovations needed to address unstable and turbulent markets. Many companies have successfully realized the benefit of co-creating innovations by opening the development process to different stakeholders.

Such an engagement in a value co-creation strategy requires the development of the proper resources and mechanisms to protect the company's innovative ideas. It also requires a complete change of the traditional company-centric and competitive mindsets. An open value creation process requires a proper balance between competition and cooperation activities as part of everyday business operations. Co-creation is not a silver bullet as companies have to work hard in order to successfully co-create innovations. Each company has to choose the degree of openness that fits their entire strategy or the single idea they are working on. Companies should also decide whether they will be the only owner of the developed idea/product, or if contributors will be co-owners. Besides making these important decisions, companies have to motivate the different stakeholders to engage in-depth into the joint development of innovative products and services.

MOTIVATING CO-CREATED INNOVATION

Research in Co-creating Innovations

Over the last two decades, several studies have shown the importance of co-creating innovations with stakeholders. Suppliers, customers, and users have a wide range of knowledge and skills that are needed for innovation development, but which often remain untapped. Through collaboration with stakeholders, companies can learn to better meet customer requirements while improving development time, performance, and costs. It is valuable for companies to regard stakeholders as partners in new product or service development. Other studies have shown that companies seem to struggle in collaborating with stakeholders during innovation development and that managing stakeholder integration presents challenges. Thus, companies have to reconsider the meaning of value which can be generated by co-creating innovations with stakeholders. Stakeholders need to consider which value can be expected from joining such projects so they can be motivated to engage in-depth into new product and service development.

We present the first findings of a research project which conducted several interviews with managers of companies developing new products and services and some of their stakeholders in these joint projects. An interview lasted between 1 and 1.5 hours. The questionnaire checklist consisted of open-ended exploratory questions. The objective was to develop insights into how the developing company and the involved stakeholders perceived the value developed during co-creation innovation projects. Knowing the perceived benefits generated by joint innovation projects supports companies in motivating their stakeholders to engage in these projects.

Motivating Stakeholders to Co-create Innovations

The easiest way to motivate stakeholders to co-create innovations is to offer financial incentives to compensate incurred expenses. Investing time and effort, offering knowledge and expertise, and taking over development risks are often associated with expenses that accrued by developing innovations with different partners. But being paid for co-creating innovations is often not perceived by stakeholders as an adequate way to compensate their investments. Shared knowledge is difficult to measure and adequately reward. Offering money to co-create innovations is often not a sufficient motivation.

Developing innovations is often associated with a high potential of development failure or inappropriateness of the product or service to the end customers. Highlighting that co-creating innovations reduces the risks for all involved stakeholders might increase the motivation to participate in such projects. For example, fashion companies traditionally needed about 12 months from initial design to the sale of their products in stores. The long development time resulted in large inventories. Fashion companies were not able to react to market changes quickly and needed to offer discounts in order to sell their products. These challenges forced some fashion companies to identify a new business opportunity. The new idea was to co-develop innovative products, including clothes and production machines. End customers were offered the possibility to develop their own clothes design and production companies were asked to develop machines that were able to produce smaller quantities of clothes in a profitable way. The development of the new machines was necessary to ensure that end customers could receive their new design within a short time period.

MOTIVATING CO-CREATED INNOVATION

Co-creating this innovation offered all involved parties the possibility to reduce their risk and one of the key benefits was increased satisfaction for all stakeholders.

Neither of these approaches ensures the engagement of all the stakeholders in co-creating new products and services. How can companies intrinsically motivate their different stakeholders to co-create innovations and achieve a higher engagement? This is a highly relevant but difficult question to answer. Based on the conducted interviews, preliminary identified factors that motivate stakeholders to engage into co-creating innovations will be highlighted.

Although product and service innovations always target profitability, experience shows that building relationships is an important factor in achieving profit. Building relationships with representatives from all of the relevant stakeholder groups has been shown to stimulate engagement in co-developing innovations. Relationships between innovative individuals can evolve out of personal or virtual meetings. No matter where and how different representatives of the involved partners meet, they are able to build up relationships. Building relationships is often associated with high costs due to the invested time and effort. Nevertheless, established good relationships produce high benefits for current and future projects. Knowing people personally increases engagement in the project and thus the probability of successfully finalizing projects. The process of jointly developing new products and services offers the possibility for different stakeholders to build new relationships that otherwise would not be possible. Co-creating new products and services provides all involved partners with the opportunity to build new relationships while increasing their engagement in the current co-creation project.

Another important factor to motivate different stakeholders to engage more intensively is to highlight the possibility for acquiring new knowledge. For example, one stakeholder might be willing to share their in-depth knowledge about how end-customers use a final product. All involved parties receive the opportunity to acquire and use the new knowledge in future product or service development projects. In addition, sharing knowledge between all developing partners might lead to new solutions that parties by themselves are not able to develop. Co-creating innovations increases the probability to create new knowledge that is relevant for all.

To create new knowledge and to develop new products and services, developing and acquiring capabilities is vital. Companies can hire employees with the needed capabilities or train existing employees, but this is often associated with high costs and may need the development of additional resource infrastructures. Co-creating innovations can provide all stakeholders with access to capabilities at no or reasonable cost. By engaging in co-creation activities, all stakeholders bring specific capabilities and open new possibilities to innovate. Stakeholders can develop capabilities which otherwise would be expensive or take a long time to develop while developing highly innovative products and services at reasonable cost.

These factors only represent the first findings of a recent qualitative research project. Future research is needed to examine which techniques and methods positively influence the engagement of stakeholders during new product or service development.

Conclusion

Companies need to focus on the development of innovations. Companies increasingly realize that developing innovations is a task that requires several partners. Using co-creation to develop innovations seems to be a promising approach to increase company performance.

Companies interested in co-creating innovations have to identify the factors that trigger different stakeholders to join such projects. It has been highlighted in this article that monetary factors are to some extent important to motivate stakeholders to join a project. However, this factor does not ensure their engagement. Additional factors have to be identified that motivate stakeholders to engage in-depth into joint innovation development projects. Based on the first results of this study, four important factors were identified:

1. Reducing risks.
2. Building new relationships.
3. Developing new knowledge.
4. Building new capabilities.

A quantitative study is now underway to validate these findings.

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Recommended Resources

Managing Supplier Involvement in New Product Development: A Multiple-Case Study

<http://ideas.repec.org/p/dgr/eureri/30008874.html>

Q. What lessons can "green" computing learn from open source?

A. Steven Chu, the current US Energy Secretary indicated in an interview (<http://blogs.ft.com/energy-source/2009/05/28/stephen-chu-open-source-software-can-reduce-need-for-coal-plants>) that open source software will help cut down on global warming. He says that global co-operation on technology to improve efficiency is vital. Open source facilitates the co-operation that can be brought into a program by various parties due to the fact that intellectual property haggling is no longer an issue.

In spite of all the recent talk about green computing, how green is information technology (IT) and computing? Experts talk about optimizing HVAC (<http://en.wikipedia.org/wiki/Hvac>) and other energy saving mechanisms, but the crux of the problem lies in the computers themselves. We need to evaluate what the software development process is costing us.

Here are some reasons why adopting some of the practices found in the open source development model can result in greener software:

Development Model: the open source development model relies heavily on shared resources and non-exclusive use of hardware and software. Project plans, bug trackers, source code, and documentation reside in the cloud. Contributors, in most cases, work out of their homes and do not contribute carbon emissions above what they would have used living in their homes. The carbon emissions that are saved when employees are not required to commute to an office location can also be substantial.

Less Power Consumption: consider the energy costs of a software company: the power consumed by developer's machines and servers, lighting, air conditioning, and maintaining other common facilities. A conservative estimate of these expenses would be at least 15% of the total operating expenses of the company.

Lower Operating Overheads: operating overheads contribute significantly to the overall cost of a company. These include sales and marketing, security services, ID cards, human resources, payroll, and salaries.

Virtualization: provides a means to optimally use system resources and provides an excellent mechanism to scale as needed. While this is not restricted to open source, the most commonly used technologies tend to be open source.

Reuse Obsolete Systems: open source applications perform quite well on older, obsolete, and commodity hardware, eliminating the need for power hungry server systems requiring a lot more infrastructure. A network of commodity systems can be more powerful and less expensive than the typical server. It will also consume less power.

Thin Clients: consume much less power than a desktop. They can replace desktops in organizations where the majority of the work is desktop based such as Internet browsing, using email and using enterprise applications. Often, a company that decides to try thin clients is trying to save money and will opt for a Linux based system.

Distributed Online: open source software is usually distributed online. This means less power is used to duplicate discs, less paper is used to create marketing material, and less money is spent overall in the distribution of the software. Online documentation is the norm for most open source software, resulting in fewer trees being manufactured into paper.

Fewer Lawyers: open source licenses tend to be litigated less often. Less money tends to be spent on legal services, including the negotiation of contracts.

Open source reduces dependence on power, money and paper. Further research can quantify how carbon emissions are reduced in an organization that has adopted open source.

Recommended Resources

Saving Power with Linux

<http://Lesswatts.org>

PowerTOP

<http://linuxpowertop.org>

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The Open University UK: Creating a win-win Situation by Sharing Code and Content

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From the Conclusion:

The deployment of Moodle and the free release of learning material as part of the OpenLearn project at the Open University gives a fair indication of how paradigms in the educational sectors are changing. From a technical perspective, the choice of Moodle as the OU's VLE shows how Open Source products can be well capable of competing with proprietary solutions. It was and is seen as the best available solution that would meet the OU's demands on stability, flexibility, scalability, and also very important: support. Compared to commercial software deployments, Moodle does not rely on one support partner, but features a community of users world wide. With more than 2,5 million registered courses and roughly 28 million users, this is a substantial source of feedback and information, which is invaluable to the work of the OU. By contributing to this community with their own developments, they create a win-win situation, as their tools improve with all the feedback and assistance, and all others users benefit from the additional functionalities added by the OU.

http://www.osor.eu/case_studies/the-open-university-uk-creating-a-win-win-situation-by-sharing-code-and-content

Harnessing Openness to Improve Research, Teaching and Learning in Higher Education

Copyright: Committee for Economic Development

From the Executive Summary:

In this report we examine higher education through the lens of openness. Our goal is to understand the potential impact of greater openness on colleges and universities. Like other service industries such as finance or entertainment, higher education is rooted in information--its creation, analysis, and transmission--and the development of skills required to utilize it for the benefit of individuals and society.

http://www.ced.org/images/library/reports/digital_economy/dcc_opennessedu09.pdf

November 2

Toronto's OpenTO Data Initiative off to Quick Start

Toronto, ON

Toronto, Canada unveiled an open data initiative Monday, making it possible for citizens to augment, use and distribute data to promote government accountability and innovation. Toronto.ca/open, or OpenTO, is the city's official data set catalog and within the first two hours of the Toronto Innovation Showcase, both the benefits and obstacles facing government open data projects were highlighted.

<http://civsourcedonline.com/2009/11/03/torontos-opento-data-initiative-off-to-quick-start>

November 11

Largest Municipal Electric Distribution Utility in Canada Deploys JBoss

Toronto, ON

Toronto Hydro Corporation has deployed JBoss Enterprise SOA Platform and Red Hat Enterprise Linux as the platform for its innovative Smart Meter program and has successfully completed the initial phases of its program to create a customer-focused cost and energy-saving initiative.

<http://investors.redhat.com/release/detail.cfm?ReleaseID=423528>

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Product Development and Innovation

Product Development & Innovation

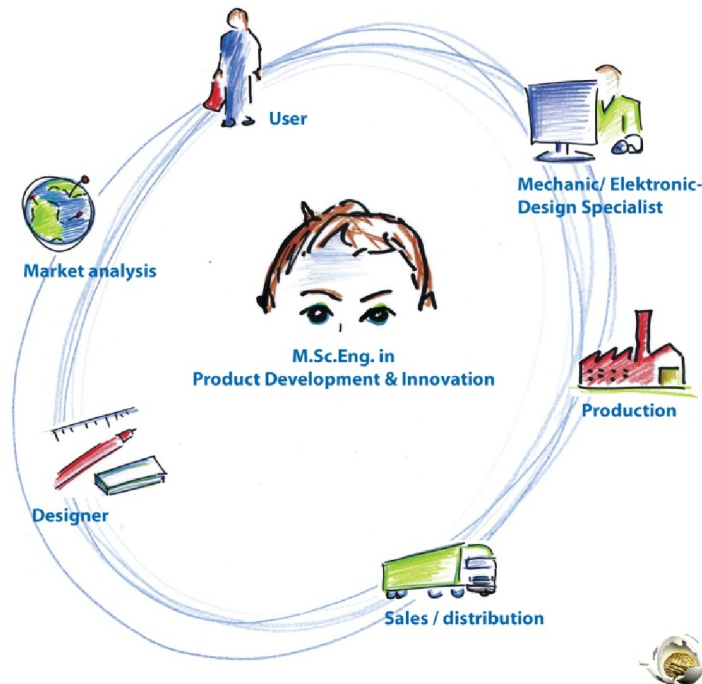


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For further information, please contact:

Associate Professor Leif Henriksen, Programme Coordinator: lh@ib.sdu.dk

Professor Mette Præst Knudsen: mpk@sam.sdu.dk

The goal of the Open Source Business Resource is to provide quality and insightful content regarding the issues relevant to the development and commercialization of open source assets. We believe the best way to achieve this goal is through the contributions and feedback from experts within the business and open source communities.

OSBR readers are looking for practical ideas they can apply within their own organizations. They also appreciate a thorough exploration of the issues and emerging trends surrounding the business of open source. If you are considering contributing an article, start by asking yourself:

1. Does my research or experience provide any new insights or perspectives?
2. Do I often find myself having to explain this topic when I meet people as they are unaware of its relevance?
3. Do I believe that I could have saved myself time, money, and frustration if someone had explained to me the issues surrounding this topic?
4. Am I constantly correcting misconceptions regarding this topic?
5. Am I considered to be an expert in this field? For example, do I present my research or experience at conferences?

If your answer is "yes" to any of these questions, your topic is probably of interest to OSBR readers.

When writing your article, keep the following points in mind:

1. Thoroughly examine the topic; don't leave the reader wishing for more.
2. Know your central theme and stick to it.
3. Demonstrate your depth of understanding for the topic, and that you have considered its benefits, possible outcomes, and applicability.
4. Write in third-person formal style.

These guidelines should assist in the process of translating your expertise into a focused article which adds to the knowledgeable resources available through the OSBR.

Upcoming Editorial Themes

January 2010:	Success Factors
February 2010:	Bootstrapping Startups
March 2010:	Mobile
April 2010:	Cloud Services
May 2010:	Consulting
June 2010:	Niche Markets

Formatting Guidelines:

All contributions are to be submitted in .txt or .rtf format.

Indicate if your submission has been previously published elsewhere.

Do not send articles shorter than 1500 words or longer than 3000 words.

Begin with a thought-provoking quotation that matches the spirit of the article. Research the source of your quotation in order to provide proper attribution.

Include a 2-3 paragraph abstract that provides the key messages you will be presenting in the article.

Any quotations or references within the article text need attribution. The URL to an online reference is preferred; where no online reference exists, include the name of the person and the full title of the article or book containing the referenced text. If the reference is from a personal communication, ensure that you have permission to use the quote and include a comment to that effect.

Provide a 2-3 paragraph conclusion that summarizes the article's main points and leaves the reader with the most important messages.

If this is your first article, include a 75-150 word biography.

If there are any additional texts that would be of interest to readers, include their full title and location URL.

Include 5 keywords for the article's metadata to assist search engines in finding your article.

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