

REVISITING THE VALUE CHAIN: AN EXAMINATION OF CUSTOMER-AS-  
PROVIDER CO-CREATING VALUE IN HIGH-TECH COMPANIES

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## ABSTRACT

### **Hope Arabia, Honors Abstract**

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*Revisiting the Value Chain: An Examination of Customer-as-Provider Co-creating Value in High-Tech Companies*

For the past several decades, corporate leaders have used the traditional value chain, popularized by Porter, to describe and examine value creation inside their companies. However, since its creation, the business world has changed dramatically. The economy has gone from a largely product-based economy to a more service-oriented economy. As a result, some companies are adapting the value chain in order to create value in new ways. One industry in particular where companies are making adaptations to the traditional value chain is the high-technology industry. In this industry, companies have found that they can use its existing customers to co-create unique value. This thesis explores the concept of value co-creation in the high-technology industry more closely to uncover differences and similarities across companies that engage in this activity.

I have compared and contrasted two large, well-known, public companies within the high-technology industry. I chose to focus specifically on the marketing and service segments of the value chain to examine how companies can co-create value with their customers. Using a qualitative research approach, I found information pertaining to these segments of the value chain by examining the web-based communities of these two companies.

In my research, I have found that both companies approach value co-creation differently and that the traditional value chain may be outdated for these two companies. I introduce a new model for value co-creation as a result of my research, and provide a number of

suggestions for how companies interested in value co-creation in the high-technology industry can create value through online communities.

## INTRODUCTION

The current value chain is in need of an update. Recently, amongst a variety of business students, a discussion broke out regarding how outdated the value chain appeared when considering the changes in the customer's environment. It seemed that the flow of communication from customer-to-customer and customer-to-business had dramatically changed while the communication from business-to-customer had generally stayed the same. The conversation evolved to identify a gap in the value chain that could greatly benefit companies and customers alike. This topic was not the consensus of everyone involved, but allowed me to conclude that a shift was occurring from a goods-centric market toward a customer-centric market.

After reading more about the traditional value chain developed by Porter (1985), I began to realize that there was a valuable gap in the literature that was currently not being addressed and that had the potential to contribute knowledge to the field of business. I embarked on a research project that attempted to uncover how customers could be included in the traditional value chain and what the relationships between the customer and the company could look like. After surveying several industries and companies, I was able to develop a model and examine the resources exchanged and contributed by a number of parties that are important in the value creation process.

After surveying the literature by exploring multiple library databased and online searches, I was able to situate my model into the existing literature of the value chain in management and the service dominant logic in marketing. Throughout this paper I will refer to several concepts that need to be defined at the outset. The following terms are

presented throughout my paper and are necessary to understand the topic. Those terms are: co-creation, value, customer-as-provider, end-customer, and community platform. Co-creation is one of the most powerful ways to engage customers and deliver unique value. The concept defines how companies and customers can co-construct products, services and experiences. Value refers to the resources that are gained through conversations and interactions between the company, end-customer, and customer-as-providers who all work to co-create the service experience or product. A customer-as-provider is a customer who has knowledge and experience that chooses to assist other customers to overcome difficulties and understand common concerns. They also communicate and interact with the company. The end-customer is a person who ultimately buys and/or is the intended user of a product or service. Finally, a community platform is a specially developed online space used for collaborative consumption.

In order to examine this interesting topic, my thesis is set up as follows. First, I will review the literature on the value chain and the service dominant logic. Then is methodology with research, design and data collection. This is followed by my sampled companies. Next is the research section which includes a table of the customer-as-provider and company relationship, a separate table of company and end-customer, and customer-as-provider and end-customer. Figures include a document evolution of the value chain, which begins with a traditional value chain perspective, then evaluates the service dominant value chain perspective and finishes with a proposed customer-as-provider value chain. Then follows a discussion and conclusion.

## **LITERATURE REVIEW**

A literature review was conducted to identify and summarize findings relating to value chain and service dominant perspective research conducted thus far. The literature reviewed in this task consisted of articles, interviews and books available from academic, government and industry sources. The review was primarily conducted through internet searches of online databases, publications, and other industry resources. The articles identified have been summarized and are described in the following sections:

- Value Chain
- Service Dominant Perspective

The primary focus of this review was to examine and further understand the value chain and the participants involved in co-valuation creation.

## **LITERATURE REVIEW METHODOLOGY**

Literature searches were performed using websites, academic databases, books, trade press publications, and articles. The following databases were used to conduct the reviews:

- EDGAR: Is the Electronic Data Gathering, Analysis, and Retrieval system, since 1984 the system performs automated collection, validation, indexing, acceptance, and forwarding of submissions by companies and others

who are required by law to file forms with the U.S. Securities and Exchange Commission (the "SEC"). This system is meant to help investors get information.

- Texas State University Albert B. Alkek Library: Research databases and library catalog. These include the EBSCOhost Databases and ProQuest Databases. These provide access to research, articles, journals, books, biographies, census and demographics, company and industry information, country studies, data sets, financial and economic data, government documents.
- LexisNexis: Provides access to many popular articles as well as some scholarly works.

### **Definitions related to the work**

- Co-creation: This is one of the most powerful ways to engage customers and deliver unique value. The concept defines how companies and customers can co-construct products, services and experiences.
- Value: Unlike traditional company-driven concepts this result is about joint creation of value through conversations and interactions between customers, customer communities who work with the company to co-create the service experience or product to suit his or her preference.
- Customer-as-provider: This is a customer who has knowledge and experience that chooses to assist other customers to overcome difficulties and understand common concerns. They also communicate and interact with the company as well.



- End-customer: A person who ultimately buys and/or is intended to use a product or service.
- Community Platform: A specially developed online space used for collaborative consumption.

## **Value Chain**

### ***Porter (1985)***

This book documents a series of activities that produce revenue and generate costs. Porter goes on to explain how value is derived through summing the commanded price and the quantity it can sell. He also identifies primary and support activities. Primary activities are from raw material to service after sale, things that contribute to physical creation of product/service. Support activities tend to support across functions and primary activities; they can create value on their own but most likely through their integration with primary activities.

### ***Stabell, & Fjeldstad (1998)***

This journal article documents the value chain as the deconstruction of strategically important firm activities to understand their contribution to cost and value. It is noted in the document that according to Porter the value chain logic is valid across all industries, but the authors have had considerable trouble applying the value chain framework across a variety of industries. They propose different typology of value chain.

***Mascarenhas, Kesavan, & Bernacchi (2004)***

Recognizes that currently customer involvement with products or service is primarily at the end of the value chain with a primarily finished product. Noting that companies have been too product-centric; however, to create value, need to co-opt and co-create with customers in some way. This paper proposes a new approach by creating a customer-value-chain involvement (CVCI.) The model is designed to enhance customer relationship management in conjunction with supply chain management, employee relationship management and retailer partners' relationship management resulting in customer satisfaction to customer delight which spawns a lifetime loyalty and positive referrals.

***Nucciarelli, Li, Fernandes, Goumagias, Cabras, Devlin, Kudenko, & Cowling (2017)***

This paper focuses on the effects of crowdfunding on the value creation process in the digital game industry. It examines the integration of value chain logic with the platform logic resulting in collaborative value creation through opening up the business models of game developers to the crowd. The benefits highlighted by the authors eludes to the potential creation of preproduction sales in lieu of equity exchange and loyalty built through collaboration in design and incentives. Crowdfunding however, can be more than just the exchange of financial resources – specifically in this paper they suggest that it can be used for community engagement, validation of ideas, exchanging ideas, and beta test with end customers.

## **Service Dominant Perspective**

### ***Ford & Bowen (2003)***

This paper is an overview of how managers can take a proactive approach to co-creating value with their customers in foodservice. Discusses an application of customer co-production, customers as marketers and customers as providers of information. Details how employees must be managed to accommodate customer interaction in the service delivery system. Customers can help organizations create values in many ways. The document references Bettencourt 1997 (Journal of Retailing) – customers help by co-producing a product, marketing, or providing information to the organization.

### ***Vargo & Lusch (2004)***

Firms are constantly in a value co-creation web with their customers, continuously interacting with their customers so that they can get feedback on products and create new products that customers value. The authors identify the fundamental units of exchange between the customer and the company are specialized skills and knowledge in the transaction.

### ***Saarijarvi et al. (2013)***

Due to changes in the way companies are doing business and thus the customer-firm relationship is constantly evolving. Conventional ways of examining value creation are no longer appropriate. A point made in the document is that goods centric logic vs. service centric logic in which value creation does not come from value-adding activities

in the manufacturing process but that customers govern in consumption. Value is co-created when customers and companies engage in mutual and reciprocal interaction that affect each other in positive ways

***Yi & Gong (2013)***

This is the development and validation of a customer value co-creation behavior scale. The scale uses two dimensions of customer participation behavior and customer citizenship behavior. The results show that both dimensions prove different patterns of antecedents and consequences. The authors share two basic types of customer value co-creation behavior: Customer participation behavior (in-role) and the customer citizenship behavior (extra-role.)

***Claub, Laudien and Daxböck et al. (2014)***

This work identifies an ongoing change of customer behavior to include an interest in a number of benefits beyond simply a product offering. The approach to investigation is through a service-dominant logic concept along with the business model concept and results in ideas of how to merge the two for successful implementation. Customer expectations have evolved, not only want a product but also service to accompany that product. Traditional perspective of the value chain needs to change as customers are more integrated in the value creation process/coordination/cooperation – multidimensional linkage. To co-create value, there needs to be communication lines between firms and customers so that there can be “encounters” between the two.

***Neghina et al. (2015)***

The key aspect of SD logic is the concept of value cocreation – value solely is not being created for the customer by the provider of the service but for and by both parties throughout the interaction. Gronroos (2012:6) value co-creation is “joint collaborative activities by parties involved in direct interactions, aiming to contribute to the value that emerges for one or both parties.” Theory arguments that were made included bi-directional communication positively impacts value co-creation, relevant content in communication (timely and appropriate) positively impacts value co-creation, trust between customers and employees positively influences value co-creation, information sharing and seeking positively influences value co-creation, and feedback positively influences value co-creation.

***Smaliukiene, Chi-Shiun, & Sizovaite (2015)***

This contribution examines value co-creation in online travel businesses using SD logic. Rapid technological development and internet connectivity has empowered customers to be more involved with the companies they buy products/services from. Traditional value co-creation research has looked at both customer to company and customer to customer. The authors present the key aspect of service dominant logic is that customers are co-creators, or some instances a creator on their own. Customers can co-create value through collaboration, tinkering, co-designing, and submitting.

***Agrawal & Rahman (2017)***

The creation and validation of a customer co-created value (CCV) scale appears in this paper. Five dimensions of CCV were used in the analysis: relational, personal, economic, interactive and experiential. The result reveals that co-created value significantly affects customer satisfaction. Technological advancements have allowed the customer to play a more active role in value creation, also has opened more opportunities for their participation. The review describes a service dominant logic that represents a shift from good centric to service centric economy which led to general acceptance of value co-creation concept.

***Tommasetti, Troisi & Vesce 2017***

This study is looking at identifying the dimensions of value co-creation. Value co-creation is central component of SDL, but value and co-creation are not well understood or defined in much of the research. They suggest eight areas/dimensions of customer value co-creation:

- Cerebral activities: attitude, expectations, trust (motivations and psychological mechanisms)
- Cooperation: responsible behavior (alignment of demands made by each partner)
- Information research and collation
- Combination of complementary activities
- Changes in habit: pragmatic adaptation (changing the way each party traditionally does things)

- Co-production: co-design and delivery (performance of activities by external parties that used to be done internally)
- Co-learning: Sharing information and feedback (integration of resources – sharing information back and forth and giving feedback for improvement)
- Connection: Relationship building and maintenance (interaction and collaboration between parties)

***Elias, Chiles, Duncan, and Vultee et al. 2018***

The authors attempt to address how value emerges from interactions and collaborations between entrepreneurs and their customers. The results presented three interrelated processes: imagining, contemplating and consensus building. The key insight is that the customer plays a vital role throughout the entrepreneurial creation process.

## METHODOLOGY

### *Research design*

My research question has not been addressed in very much of the existing research on value chains and the incorporation of customers into the value chain, especially the concept of customer-as-provider. Due to this, I have decided that the most appropriate method would be a qualitative approach. Qualitative research is an approach where researchers examine text to answer research questions. Texts can be generated from interviews or they can be gathered from surveys or web-pages. My research collects texts from web-pages.

In addition to the qualitative nature of my research, my research can also be considered to be inductive – in which I am allowing the data collected to inform my theory about how companies can more successfully use the customer-as-provider participant. Inductive research is different than deductive research because deductive research starts with a general theory and then the theory is tested by collecting the data. As I mentioned above, there is no general theory that relates to my interest in the customer-as-provider. Because of this I have chosen to start with the data and let the data tell me what the theory might be.

### *Sample*

When investigating the potential for the co-creation of value I considered multiple industries, as I had found many examples of innovative customer interactions across a variety of fields. My list began with the airline industry and developed to include the auto industry, fashion retail, on-line exclusive fashion retail, cyber-security, high-technology, general retail with on-line access only, on-line game development and the electronic



industry which included makers of televisions and player devices. I narrowed this list to find the industry that had companies which possessed the ability to publicly interface with a customer and quickly apply corrections via service interactions. This was necessary to accurately observe events involving the company and customer, while also displaying the evolution of the customer-as-provider.

Many of the industries were eliminated due to the sole use of the very antiquated yet commonly used one-way relationship from company to end-customer. The industry ultimately selected was high-technology. I collected initial information to check on specific data availability. I eliminated any companies that were not comparable or offered the data I was looking for. These companies also had to meet the following criteria because of their importance to the customer-as-provider concept: open and public communication, documentation of customer interactions, demonstrated the need or issues of customers, and allowed for satisfaction or feedback to be publicly displayed. With this criterion in place, three high-tech companies were chosen for initial review through more in-depth research, I realized that one of the companies was an outlier and not as comparable as the other two. It was decided to eliminate the outlier and commence data collection with the remaining two companies. Once the data was collected and proved comparable it was thought best to make the companies anonymous as they are both prominent in their industry. The thinking was that this would eliminate bias toward either by the reader. I refer to them as Company X and Company Y throughout the remainder of this paper.

Company X is a large U.S.-based technology company that has been around for over 30 years. Company X does business in international markets and its main products

include software and operating systems for both personal computers as well as entire business infrastructures. Company X invests a great deal in research development and has recently embarked on a strategy of renewed innovation and production. Customer service is vital to this company's success since problems with products are often well advertised and public. Customers of this business expect service that is not only effective but timely.

Company Y is similar to Company X. Company Y is a large U.S. based technology company that has also been in existence for more than 30 years. Company Y also does business across the globe. While Company X was focused initially on operating systems for personal computers, Company Y was founded as a developer of personal computers. Company Y has since expanded over the years to produce its own operating system as well as a host of other innovative products in mobile communications and media. Similar to Company X, customer service is vital to this company's success since problems with existing products are well publicized. Customers of this business expect service that is also effective and timely.

### ***Data collection***

I collected data from three sources. First, I searched for online forums that displayed company and customer interaction. Upon further investigation of company websites, it was found that each company offered a customer support social community. These communities were found while seeking support information for company products. A customer support community is an online forum to help promote customer satisfaction by offering a platform for end-customers to state their problems with products while simultaneously encouraging other customers to suggest solutions. These communities went beyond a Frequently Asked Questions (FAQ) page or the 'Contact us' information.

I observed each community platform. I collected data on all of the company to end-customer, company to customer-as-provider, and customer-as-provider to end-customer interactions. These interactions ranged from statements regarding problems or issues with products and the resulting solutions or alternatives for end-customers as suggested by a customer-as-provider or by a company employee. I also documented interactions that included information about training on products, the introduction of new products, beta test pools, special reward features, customer idea generation for the company, and the general social interaction function of the community. I specifically recorded information related to the resources contributed and resources gained in each interaction. Below are the summary of results across the two companies. I have documented the similarities between companies in order to produce a model which generally shows the importance of the customer-as-provider group. The analysis is summarized in table A. I will describe the results of the analysis below.

*Sampled Companies*

<b>Table A. Sampled companies</b>		
	Company X	Company Y
Markets	International	International
Scope of products (include but not limited to)	Operating systems, personal computers, server applications, business solutions, desktop and server management; software development, cloud-based solutions, consulting services	Operating systems, mobile communication, personal computers, software, third-party digital content, web applications, cloud-based technology
Years public	30+	30+
Employees	115,000+	115,000+
Return on assets	8.74%	13.54%
Debt to assets	27.0%	24.7%
Revenue growth (2016-2017)	5.4%	6.6%
Foreign sales as % of total sales	24.4%	19.3%
Assets to liabilities	1.51	1.61
Capital expenditures to total sales	9.4%	5.7%
Profit margin	21.6%	21.2%

\*All financial data is an average of the 2016 and 2017 fiscal years

Table A provides a side by side comparison of Company X and Company Y. All of the financial data is an average of the 2016 and 2017 fiscal years. The two companies both compete in international markets. Company X's scope of products include, but are not limited to operating systems, personal computers, server applications, business solutions, desktop and server management; software development, cloud-based solutions and consulting services. Company Y's scope of products include, but are not limited to operating systems, mobile communication, personal computers, software, third-party digital content, web applications and cloud-based technology. Both companies have been present in the technology sector for over 30 years. Company X and Company Y have a large employee base with each ranging over 115,000 each. Their return on assets is 8.4% for Company X and a slightly larger 13.54% for Company Y. The debt to asset ratio is

27% for Company X while Company Y's debt to asset ratio is slightly lower at 24.7%, however both companies had similar asset to liability ratios at 1.51 for Company X and 1.61 for Company Y. Both companies' revenue growth are comparable in the 2016 through 2017 fiscal year. Company X's revenue growth was 5.4% while Company Y had a revenue growth of 6.6%. Company X had higher foreign sales (24.4%) and capital expenditure to sales ratio (9.4%) than Company Y (19.3% and 5.7% respectively). Both companies had very comparable profit margins with Company X having a 21.6% and Company Y was at 21.2%. This data shows that the two companies are comparable cases for this study.

## **RESULTS**

### **Customer-as-provider and Company relationship**

For each of the paths in my triangle, I am going to explain both the resources gained and resources contributed by each party in the effort to co-create value. Doing this will allow me to understand what resource exchanges are taking place and how each party in the triangle benefits from engaging in the co-creation process. I first start with the relationship between the customer-as-provider and the company.

Both companies that I chose for observation had a system for a person posting a problem to also nominate the best solution offered to them. The other and most important observation available was the evolution of the customer to become a customer-as-provider. This was done through intrinsic and extrinsic methods. The platforms had been gamified offering a curious customer to stay and explore other experiences than just posting a singular problem and waiting for a solution. The websites offered awards, badges, training, new product information, beta test pool opportunities, and general social

interactions. Many resources were contributed and gained by the participants of the platform and this also benefits the end-customer regardless of their participation. I then collected those observation from the company support pages.

<b>Table B. Customer-as-provider and Company</b>		
	<b>Customer-as-provider</b>	<b>Company</b>
Resources Gained	Platform for interaction	New insights about potential issues
	Recognition and appreciation	Customer service support
	Exclusive company access	New ideas
	Credibility	Dedicated product purchases
	Intrinsic satisfaction	Fan – marketing
	Access to new products	Customer loyalty & satisfaction
		Cost savings
		Efficient service
Resources Contributed	Ideas	Rewards program
	Testing	Exclusive platform for interaction
	Information about products	Special product releases
	Solution editor	Exclusive opportunities and benefits
	Human resources	
	Interest	

While observing the community platforms for each company the following data was noted (see Table B) on both sites pertaining to the interaction between customer-as-provider and company. It has been simplified into two groups. First, I noted the resources gained by the customer-as-provider as furnished by the company. They insured that there was a space provided to interact with like-minded individuals. This appeared very similar to that of social interaction platforms. It offers methods of public connection, conversation and collaboration. They created a system for recognition of accomplishment amongst peers. By gamifying this portion of the platform, it incentivizes participation to earn special recognition. The customer-as-provider has access to resources like participating in company developer conference calls and exclusive access to new products. Both companies offer credibility for the customer-as-provider via the different

rankings achieved through participation in the platform. To a novice user it appears that a high ranking or heavily awarded participant has credibility and authority when responding in a chain of posts. The customer-as-provider gains an intrinsic benefit of need fulfillment. On the surface these benefits appear to include meaningfulness, choice, competence and progress.

Then, the company had resources gained as given by the customer-as-provider, which included insight into future expectations. These expectations were found by collecting data in the conversations occurring on the platform. Another resource gained is the company's ability to support a larger volume of customers with the help of the customer-as-provider. When comparing the use of a customer service or community platform to a customer service hotline, it is estimated to reduce the calls to a hotline by half. It was observed that the empowered customer-as-provider is a great resource of idea generation. The customer-as-provider participant, with little encouragement, generates and shares ideas that solve their own current problem or identifies needed products or services. The platform has ultimately collected a willing group of volunteers which perform similar roles to traditional employees. This selection is also unique in that a company is not randomly choosing people in a mall or online to poll with one-way communication. This group has self-selected due to an interest or problem with the company's product and has remained a participant due to some other intrinsic factor that the company helped to facilitate in the creation of the platform. If the platform is used to excite the proven customer base (customer-as-providers) about a new product, this pool can also make-up your first customers. This is especially successful if the company has co-created the product with the customer-as-providers.

Emerging from the community there is a dedicated few that will engrain themselves deeply and participate on such a level that he is a staple of the community, herein lies the raving fan. This person participates in events, conference calls, social meet-ups and interacts regularly within the community. They also communicate outside of the community to share their excitement and gather more potential customers. Furthermore, the company gains customer longevity and loyalty by having the customer engaged between product releases. Longevity does not equal loyalty. Some customers have longevity because a better option has not presented itself yet. The loyal customer has built a relationship with the company. Sometimes, the best opportunity a company has to forge this strong relationship is through resolving an issue for the customer. In contrast the customer that never experiences issues has an expectation that is being met constantly but has not had anything exceptional occur. The problem or issue does provide an opportunity for the company to win over this customer and turn them into a loyal one. The fact that customer satisfaction is occurring in this transaction can be observed on the platform with the customer who posted a problem who is then given the opportunity to return and select the solution. Other customers with a similar problem to the one posted can also show their satisfaction by an accumulation of marked acknowledgements.

Additionally, I speculate that the company also gains free labor via the customer-as-provider's participation. This eliminates or greatly reduces the need for a customer service provider to be hired and trained. The level of service provided to end-customers is that of a user that has already experienced the issue first-hand. What better way of understanding exactly what the end-customer is going through than a user with a similar experience? This solution gives the customer-as-provider exceptional information to



resolve issues. I also assume that the company benefits from additional cost savings and more efficient service by partnering with the customer-as-provider.

The resources contributed tend to be a mirror of the resources gained (hence throughout, each item in the table may not be expanded upon in an attempt to prevent repetition). Here the resources contributed by the customer-as-provider to the company include idea generation which allows the customer-as-provider the opportunity to give creative solutions regarding products or services. This group also qualifies as beta test pool candidates. The customer-as-provider provides unbiased feedback on products, services and solutions, as well as gives feedback to customer questions or issues. They also offer solutions and critique feedback from other customer providers to ensure the best possible solution to customer issues without tying up company resources.

A customer-as-provider is also a solution editor when they can provide a higher level of experience with an issue or product. This is a case when a product provider refines suggested solutions from the community of customer-as-providers. These services are free to the company and do not require the company to provide a paycheck, healthcare or bonuses, and result in no staffing liabilities for the company. Customer-as-providers also dedicate round-the-clock time and their expertise of the products and services of the company. Another service provided is data entry. The customer-as-provider is making suggestions and is then responsible for entering solutions, articles, tips, and generally creating and inputting content for the platform. They also provide topics that are relevant to current problems or interests and of use to others.

## Comparison of Company and End-customer

<b>Table C. Company and End-customer</b>		
	<b>Company</b>	<b>End-customer</b>
Resources Gained	Feedback	Product
	Collaboration	Service
	Financial resources	Platform for feedback
	New product adoption	
	Goodwill	
Resources Contributed	Platform for feedback	Feedback
	Deals to encourage participation	Self-service
	Product	Financial resources
	Service	

This relationship between the company and end-customer is typically seen in the traditional value chain as an exchange of goods and services for money. The community platforms allow for deeper communication that creates value for both parties. The company contributes resources which include providing a platform that allows communication and interaction. It is important that the platform organize conversations and interactions for effective and not overwhelming use. Effective communication is vital for growth. In addition to providing the platform, the company must also educate its customers and encourage their participation in the community. Both companies created reward-based systems that generate information and encourages participation. The companies also both offered alternative methods to finding solutions. They recognize that customers are in different stages of familiarity with technology. Accessibility for customers by live phone customer service, live on-line chat, support and FAQ pages have been standard in many companies and customers rely on where this is located as well as the level of assistance they expect to receive. The two companies observed in this research redirect customers on their support page and offer the customer to ask the

community. One company found that since implementation of the community that customer service phone assistance has dropped by half. (Fried 2009)

Although, the resources contributed by the end-customer listed here are just a few, they are important. The resource most noticeable on the community platform that is contributed by the end-customer appears to be feedback. Feedback on products and services, which include problems, issues, functionality, alternative use, misunderstanding of instructions, requested updates or improvements, compliments, praise and suggestion of future products. Over 2 billion occurrences of this type of feedback are brought to each site every year. (Richards 2009)

The other resource the end-customer provides is self-service. If the platform is well-organized and convenient for the customer then the result is the customer locating the solution to their problem. They can refine their own search without having to explain or communicate it to someone else. This creates clarity and accurate results. Some events observed on the community platforms showed thousands of end-customers publicly acknowledging that they too had this issue. This means that they do more than just post a problem and wait for a solution. They locate their problem or a similar one and benefit from an immediate resolution. It seems the benefits to the end-customer could include satisfaction and good feeling for the company. The resulting exposure to the community may result in curiosity that draws them to further investigate the platform and become a participating customer-as-provider.

The resources gained in this relationship may also mirror some of the resources contributed so I will not elaborate on those as they have been explained above. The company gains feedback from the end-customer to better the customer experience.

Feedback is also beneficial for product improvement. There is clearly a cost savings on traditional support vehicles (i.e., phone, email, IM, etc.). Cost savings can also be found for traditional marketing. The company now benefits from open communication with their customer base, because through participation on the site the company has an opportunity to inform and converse with the customer instead of advertise to them.

This community platform also allows customers to participate in submitting contact information that furthers connection for updates and inclusion. The resulting collaboration between the company and customer brings in unbiased ideas. Their sharing is uninhibited. Another resource gained by the company is market momentum, simply because the company is communicating excitement far before a new product rolls out. This means that you already have a base that is in support instead of trying to rally support after the product is available. There is also a massive data source available to the company. This can be used in data analytics and analysis. Possibilities are endless with this information. New product adoption is more likely with end-customers who have experienced remedies for issues and have access to information regarding new products. Goodwill development is created and gained by the company as a result of these interactions. This group of end-customers also can become a financial resource by pre-purchasing new or exclusive products. This has no equity cost and may even act to fund tooling and other expenses for new products.

The resource gained by the end-customer as mentioned above is satisfaction improvement. When comparing the platform method to a traditional phone hotline method, the customer is most likely able to find a solution faster and is also able to refine their question, or search answers to improve the information they are receiving. The

company is able to offer further improved satisfaction by interpreting the information given on the platform. Finding and understanding the frustrations allows the company to correct them on a larger scale. The community serves as a great benefit of 24 hour, 7 day a week access to information with no additional costs to the company beyond hosting a website. No additional employees are needed to keep a website open and available at all hours, just perhaps an on-call technician in case the website experiences an issue.

End-customers also get improved accuracy, autonomy, and flexibility by using the self-search function. This is especially beneficial to customers who may struggle with communicating on a phone hotline. Convenience and personalized support occur on the community platform to the benefit of the end-customer due to the ability to submit a precise question and communication is open which allows the person answering the question to ask further questions to achieve clarity making this a very personalized experience. The convenience is that the community is easily accessible and always available. As a result of the above interactions, the company is able to deliver and produce improved products and services. To this point, the online communities both showed that the self-service approach was welcomed by their users and customer service calls had been greatly reduced due to the communities' ease of accessibility.

Company X had stated in 2009 that their community was reaching 11 million customers a month and to give you some idea of cost savings I have developed a hypothetical assessment of the savings. (Richards 2009) For example, if a call center employed 5,000 phone representatives a month, and each representative answered 110 calls a day, each call would need to be no longer than about four minutes to resolve the problem before the representative would need to move on to the next caller.

## Comparison of Customer-as-provider and End-customer

<b>Table D. Customer-as-provider and End-customer</b>		
	<b>Customer-as-provider</b>	<b>End-customer</b>
Resources Gained	Social interaction	Effective solution to problem
	Collaboration in service provision	Custom support
	Need fulfillment	Efficient and timely response
	Feedback on expertise	Confidence in company/product
		Exposure to new products
Resources Contributed	Time and knowledge	Information on problems
	Social interaction and collaboration	Feedback on service
	Quality service	Feedback for need fulfillment
		Feedback on products

As seen in table D, the relationship between the customer-as-provider and end-customer involves a number of resource exchanges. The customer-as-provider uses their experience and knowledge to offer suggestions to solve other customers' problems. The quantity of information is improved due to the number of people that could potentially respond. The customer-as-provider brings real experience to the same problem. They have likely already used the product in question and have had some issue that led them to originally participate in the community. The customer-as-provider and the end-customer have aligned interest in solving user problems with products or services. They currently own the product and would like it to function as promised at the time of purchase. They do not want to seek out a new item, but have chosen an avenue of attempting to remedy this by finding a solution. The customer-as-provider also contributes social interaction. They are available and corresponding with others within the community at a higher rate than the company. They may have a connection in addition to a similar problem with a product or service that extends beyond and creates real relationships between them and the end-customers they help.

The resources contributed by the end-customer begin with posting of a problem. They also give a great deal of feedback to the customer-as-provider. This was noted in the research as selecting a positive feedback tool on the community platform commonly known as a 'like' or some element of a rating scheme. Additionally, other customers have an opportunity to mark (positive or negative) any of the customer-as-provider's responses, articles or tips. This gives the customer-as-provider information that the input they gave was useful. Being admired and appreciated is an encouragement to continue to participate. This method also offers a democratic way of pushing the best solution to become easily visible to all users. If the initial questions required more clarity the customer has an opportunity to do so with the customer-as-provider. The communication between the two then results in a solution or remains under answered and draws the attention of the company. These are then resolved by a qualified technician or product developers. The end-customer also has an opportunity to give the customer-as-provider praise and appreciation which acts as need fulfillment. At times this is the acknowledgement and accolade that people seek out. The end-customer at times offers additional thanks beyond marking a 'like' or helped box. The end-customer confirms for the customer-as-provider that they have indeed made a successful contribution and the customer-as-provider then receives recognition and perhaps the filling of an intrinsic need.

A resource gained by the customer-as-provider is connection and collaboration. These both satisfy the intrinsic need to connect and work with others. Many other intrinsic needs are gained such as self-esteem, validation of skills or knowledge, contribution, accomplishment and recognition. The awards and badges collected in these

gamified platforms encourage a curiosity and interest in what the platform can provide beyond a questions and answer board. The awards and badges satisfy a need for acknowledgement and recognition. It also confirms to the customer-as-provider that their contribution has merit or value. The customer-as-providers may even feel compelled to complete even more posts to gain more awards than others.

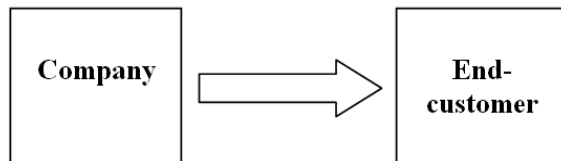
The resource gained by the end-customer from the customer-as-provider is the solution to the problem. Tailormade support is gained because the customer is describing their needs in posting of a problem, and then the support provided is specific to the customer's need. The response is timely also time effective. The end-customers are interacting with others to find solutions to problems. This creates confidence in the product especially once it is resolved. Exposure to alternative products also can occur when a customer-as-provider makes suggestions to resolving a problem by offering products that may be better suited for the need or use of the end-customer.

One event that was recorded from Company X's community site captured an example of an interaction between the customer-as-provider and several other community members. More specifically, it involved a customer-as-provider that was excited to be a collaborative member of the community. The customer-as-provider touted the volume of knowledge he has received as a participant in his 1500<sup>th</sup> post on the community site. He was openly excited about how rewarding the experience has been and then goes on to thank those involved. The connection, collaboration and positive intrinsic fulfillment given by the end-customer through praise and acknowledgment inspired the customer-as-provider to contribute, participate and grow.



Figure 1. Evolution of value chain relationships – Traditional

***Traditional value chain perspective***



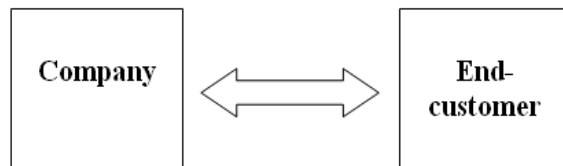
The traditional value chain is a strategy tool used to analyze company activities. The most widely used value chain is Michael Porter's as described in his seminal book *Competitive Advantage*. In his book, value is described as the amount that buyers are willing to pay for what a firm provides and is ultimately measured by total revenue (firm's commanded price and the quantity it can sell). It deems that a firm is profitable when the value it receives exceeds the total costs involved in creating products or services. This is his key concept used in analyzing a firm's competitive position and ability to create value.

Porter's value chain describes two different categories of activities. The first consist of five different primary activities which include, inbound logistics, operations, outbound logistics, marketing and sales, and service. These activities contribute to the physical creation of the product or service, the sale and transfer to the end-customer, and its service after the sale. It is important here to recognize that within this value chain the customer is not included in any aspect of cultivating value from primary activities, but is rather interacted with solely to transfer the product or service out of the company and will then require service after the sale. The described method requires much effort put into rallying consumer interest and educating the consumer to recognize its necessity in their life once the final product is created. The transfer of product or service from company to end-customer is simplified in figure X. Note that this value chain only offers one-way

communication to the customer, an example would be through marketing methods like television and print, note the one-way arrow. The second category of activities are referred to as the support activities and can be divided into generic categories. These consist of procurement, technology development, human resource management, and general administration. They either add value by themselves or add value through pairing with both primary activities and other support activities. Again, value referred to here is monetary and the customer simply consumes with no contribution.

Figure 2. Evolution of value chain relationships – Service dominant

***Service dominant value chain perspective***



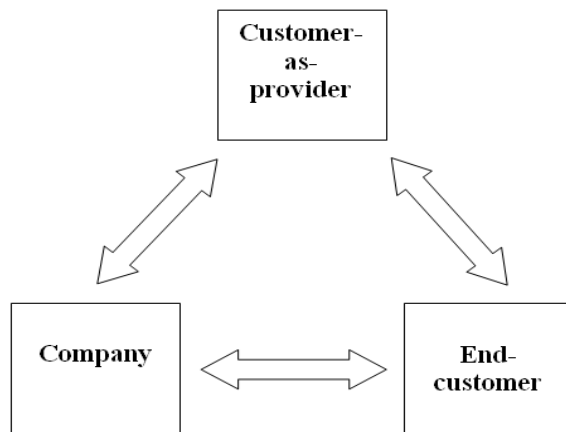
Next, in the evolution we start to see mass movement towards the service dominant value chain. This concept improves upon the traditional value chain by refining communication to encourage feedback and offering support, additional service and solutions. Note that this value chain as displayed in figure Y, attempts two-way communication with the customer.

A portion of value for companies through this method result in the customer assisting in creating value by way of feedback and participation. Again, the value here is primarily monetary. An example of this is cost savings by setting up a fast food restaurant in a manner by which the customer places their own order, collects their own payment, delivers their own food to the table and also cleans the table once finished. This is being done by training employees and reevaluating the customer area floor plan to encourage

participation in the self-service process. Limited feedback is encouraged by way of customer surveys and satisfaction polls. The responses available to the customer are predetermined and do not allow for open communication. This is where we start to see the company using the customer for co-creation of value.

Figure 3. Evolution of value chain relationships – Proposed

***Proposed customer-as-provider value chain***



I have observed through this research that companies are creating value differently than in previous iterations. This value chain identifies a customer that voluntarily participates to create value beyond that of an end-customer. I refer to them as the “customer-as-provider.”

There is little, if any, guidance or documentation that identifies or describes this additional participant. The triangle in figure 3, helps to identify the roles of the different users involved in the creation of value and the flow of communication.

The company and end-customer have always been identified in the business model, as technology has evolved this customer-as-provider has been provided an

opportunity to emerge. This format is not dependent on the company, people using this method have not found their solution on a customer service phonenumber, but instead are becoming subject matter experts through self-discovery then, selecting and sharing product information. What I see is an opportunity for the company to participate and benefit. The resulting value for the company has an opportunity to far exceed previous expectations of customer satisfaction with the previous service dominant value chain. This encourages companies to find solutions by working with customers and taps into the source of true cost savings and ensured sales.

A company has an opportunity to gain a multitude of benefits by supporting the customer-as-provider with a platform and motivation to participate. The customer-as-provider not only offsets costs, but provides value beyond financial. The addition to the value chain is that the customer-as-provider is incorporated into all aspects of product lifecycle. When you create your product with your customer you benefit from idea generation, funding opportunities, diverse innovation and product development. This group becomes your raving fans and market influencers. This experience encourages them to become the ideal customer.

## DISCUSSION

This research observes two companies in the high-tech industry and how they are using community platforms to co-create value with their customers. The most important findings appear to be the identification of the customer-as-provider and the implementation of effective strategies by which value is co-created by each of the exchange partners. By comparing events between company and end-customers on both platforms, the findings revealed a series of resource exchanges. The resources were documented as those gained and contributed by parties involved in this exchange.

It was intriguing to observe an evolution of an additional and unexpected participant, the customer-as-provider. This research identifies and defines the customer-as-provider, and documents how they participate in the creation of value when interacting with the company and end-customer. When identified and encouraged, this will allow the company to confidently invest in collaboration with the customer-as-provider, and customer interactions will be more effective. Unlike in previous papers where the customer should be considered partial employees or part of the workforce (Zeithaml & Bitner 2000: 322) in an attempt to offset costs, this paper sees the customer-as-provider as a self-selected participant throughout the value chain and production process.

The effective strategies taken by companies result in successful integration of the customer-as-provider while harnessing technology. When observing the exchange of resources gained and resources contributed by each participant, some simple to intricate strategy methods were noted. First and foremost, a platform must be created and maintained for this level of interaction to occur. The company can gamify the platform and entice the customer to participate in fulfilling other customer needs, thereby

encouraging the emergence of the customer-as-provider. Intrinsic rewards must also be built in to provide long lasting participation.

Furthermore, when it comes to the company and customer-as-provider relationship, value is co-created by platform for interaction, recognition and appreciation, exclusive company access, credibility, intrinsic satisfaction, access to new products, ideas, testing, information about products, solution editor, human resources, interest, new insights about potential issues, customer service support, dedicated product purchases, fan – marketing, customer loyalty and satisfaction, cost savings, efficient service, rewards program, exclusive platform for interaction, special product releases and exclusive opportunities and benefits. Alternatively, in the relationship between the company and end-customer, value is co-created through customer feedback, collaboration, financial resources, new product adoption, goodwill, platform for feedback, deals to encourage participation, product, service and self-service.

Finally, the customer-as-provider and end-customer's relationship results in value through social interaction, collaboration in service provision, need fulfillment, feedback on expertise, time and knowledge, social interaction and collaboration, quality service, effective solution to problem, custom support, efficient and timely response, confidence in company/product, exposure to new products, information on problems, feedback on service, feedback for need fulfillment and feedback on products.

While previous studies have discussed customer participation in the co-creation of value, this study specifically reveals a customer-as-provider separate from the end-customer. Identifying the value contributors is of great benefit to the company.

Communication improves by no longer speaking at an audience, but instead the company and customer interact to improve customer experience and company success.

With regards to the traditional value chain logic, several business factors in the existing value chain are improved by the addition of the customer-as-provider. They contribute toward internal activities such as product design, financing, investor relations and elevate customer service staffing needs. They are also contributing in sales, market research, customer support, advertising and promotions. The identification of the customer-as-provider brings awareness that the value chain is multidimensional. The traditional value chain is improved by acknowledging the customer as more than with whom the end product is simply sold and transferred. The co-creation of a product throughout the product lifecycle ultimately creates a product that directly satisfies the needs and desires of the customer while still considering company limitations.

From a practical perspective, identifying and partnering with the customer-as-provider is a real asset to the company and end-product. Partnering with these customers eliminates or greatly reduces product failure in the marketplace. Customer service is no longer solely the responsibility of the company, by partnering with the customer-as-provider, issues presented are current and relevant. Cost savings will increase with this partnership and new ideas about value will be created.

### **Limitations and future research**

As with all research, there are limitations to my research project. For example, the companies that I have chosen are from one industry. This might limit whether my results can be applied to industries that are not high-tech industries. Another limitation is that I only used two companies for this study. There may be other companies that also use

customer-as-providers but I did not find any more and so my sample size is very small. Another limitation in my research is that both of the companies I studied were based in the United States. This means that the results might not be able to be used by companies that are headquartered in other countries. Finally, I only used data that I could find from publically available sources. There might be private information that I cannot access that might add or take away from my general findings.

As a result of my research, I think future research can focus on three general areas. First, future research might look to remedy the limitations of this research. That means future research could look at collecting information from more companies, industries and countries. Second, future research could examine the idea of value and how actual companies measure the value that is co-created. They might also think about how companies can gauge the effectiveness of the customer-as-provider. In today's business world, companies are focused on the bottom line. Future research should look at how companies can accurately measure how much value is created by these new configurations of the value chain. Finally, future research could also look at each of the relationships I have stated in my model and provide more detail about the mechanisms and exchanges of resources between each partner in the triangle. This would give actual companies a better idea of what they need to do to reap the rewards of the customer-as-provider participant.



## CONCLUSION

We have seen that the traditional value chain lacks communication and coordination between the company and the customer. It focuses on creating value through revising a series of primary and support activities. The service-dominant chain remedies this to some degree but still fails to fully understand the role that certain customers can play in value creation. As a result, I examined several companies in the high technology industry that exhibited a new and interesting phenomenon which I have defined as the customer-as-provider. I further proposed a multidimensional value chain identifying the customer-as-provider and encouraging them to collaborate with the company through various means. I also have documented successful strategies in the form of interactions and resource exchanges between company, end-customer and customer-as-provider.

The business environment is shifting and the value chain must as well. The advancement of technology and the internet have allowed for a rapid exchange of information. Companies today must be diligent to participate in the conversations that occur and effect their product, service or brand. The examples in this research offer innovative customer and company interactions that result in value. The addition to the value chain is that the customer-as-provider is integrated into all aspects of the product lifecycle. When this method is implemented the company, end-customer, and customer-as-provider each create value.

In addition to the model that I have created here, I have also outlined a number of areas for future research. Researchers can take what I have done here and extend knowledge about value chains and value co-creation between companies and customers.

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