

Revisiting Marketing Mix

Study of Evidences for Investigating Innovative Role of Technology in Co-Creation

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Abstract

With increasing complexities of intense competitive market there is an evident emerging need for change in mechanisms of marketing. Out of all the most promising is the convergence of company and the customer. This synergy is innovatively utilized by companies in co-creating and this has been possible mainly because of the platform provided by Information Technology. Thus this paper highlights the role of Information Technology and how it can be leveraged for enhancing customer value by laying strong foundation for co-creation of product, price, place and promotion through continuous interaction between the communities of customers and company. The paper discusses the market evidences of several companies who have been successful in re-creating 4P's of marketing with the innovative usage of Information Technology. This paper also intends to propose an algorithm to model interaction between technologically co-

created 4P's and its impact on company's profit using Agent Based Modeling.

Keywords: Co-Creation, Customer Value, Information Technology, Agent Based Modeling, 4P's

INTRODUCTION

Co-creation has changed the market from traditional target based mechanism to new forum where customers are no more passive but actively engaged in creating value for themselves through active participation. Traditionally in the markets company was at the centre focus but now co-creation has changed this inequality wherein customer is as much as part of the market as is the company. Now the roles of the company and the customers are converging, resulting in creation of forum where company and customer interact actively. 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". Further C.K. Prahalad and V. Ramaswamy emphasized on the building blocks of co-creation of interactions between the firm and consumers that facilitate co-creation experiences through Dialog, Access, Risk-benefits, and Transparency (DART). These blocks facilitate a continuous interaction between the communities of customers and company. These blocks can be combined to facilitate high quality of interactions and variety of experiences between the company and customers across

different platforms. Dialog is an important element in the co-creation view. Markets can be viewed as a set of conversations between the customer and the firm (Levine, Locke, Searls, & Weinberger, 2001). Dialog implies interactivity, deep engagement, and the ability and willingness to act on both sides. But dialog is difficult if consumers do not have the same access and transparency to information. More importantly, dialog, access, and transparency can lead to a clear assessment by the consumer of the risk-benefits of a course of action and decision. In order to build this kind of platform which facilitates the two-way interaction, access and information between the customer and the company the role of Information Technology is inevitable.

LITERATURE REVIEW

"Co-creation" is emerging as an attractive label amongst different researchers within marketing, and innovation. Co creation is depicting a promising vision of innovative phenomena (Vargo and Lusch 2004, Prahalad and Ramaswamy 2004). The term co-creation is used to address how social and technological changes enable organizations, groups and individuals to interact, collaborate, and solve problems, by jointly creating value (Ramaswamy and Guillard 2010). As a result, the development of value co-creation platforms is increasingly recognized as an important innovation strategy associated with an ongoing change of the nature of innovation itself (Tanev et al. 2009). Value co-creation has emerged as a business

paradigm describing how customers and end users could be involved as active participants in the design and development of personalized products, services, and experiences (Prahalad & Ramaswamy, 2004).

A close view of dynamics of marketing clearly reflects the involvement of consumers in value co-creation at the product commercialization and post launch stages which is becoming very common and popular (Nambisan and Baron 2009). Effects of co-creation on consumers are asymmetrical and apply only to positive outcomes with high perceived quality and satisfaction and not to poor outcomes (Bendapudi and Leone 2003).

Majchrzak and Malhotra have emphasized that Information System are being used not just as an enabler but rather can be a shaper that optimizes open innovation in general and crowdsourcing in particular. The rapid growth of innovative Internet based information and communication technologies has created a new field of opportunities for organizations to reach their customers. This process has become easier than ever. Companies are now using variety of IT tools for an active interaction with their potential customers to get a better insight and help their marketing intelligence system to be more accurate. Information Technology has not only created platform of interaction between the company and the customer but now customers can interact with each other and so can companies do between themselves as shown in figure 1:

Information Technology has not only created platform of interaction between the company

and the customer but also in-between the customers and companies .The interaction between the customers helps in sharing value and experience that customers have derived. Companies who collaborate do co-create value to deliver it to the end user and also co-creating the value with the engagement of suppliers using different Information Technology based platforms and tools. Porta et al (2008:14) pointed out that it became easier for enterprises “to find and encourage those small groups of highly dedicated users who are willing to allow other users get the most out of these sites, advocate the brand, spread the word and contribute content”. To the core of marketing lies the 4 basic P’s as identified by McCarthy which involves Product, Price, Place and Promotion.

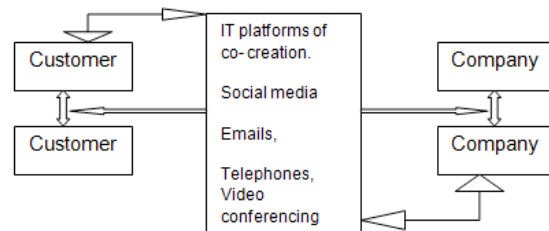


Figure 1: Process of Co-Creation through interaction via IT platforms

Source: Developed by Authors, 2014

Computational social science is based on the idea of constructing models and then using them to understand the social world (Sawyer, 2004). Computer simulations are not new to the study of marketing. Many complex processes like process leading to “lock-in” in consumer markets have been modeled. Lin, and Shaw (1998), have also described a model to study the impact of information sharing in

divergent assembly supply chains emphasizing the promising role of computational science. The current research takes a different approach and proposes algorithm to model impact of co-created 4Ps on company's profit.

We shall now try to analyze how Information Technology has helped companies to engage themselves in the process of reaction of these 4P's with the help of case studies.

MARKET EVIDENCES OF INFORMATION TECHNOLOGY INTERVENTION IN CO-CREATION

Co-Creating "Product" using Technology

Tanishq, the jewelry arm of the Tata Group, has launched a co-creation dialogue with customers called as 'My Expression', which invites consumers in a co-creation activity. Participants are invited to submit an idea for Mia – the new Working Women's product line from Tanishq. Of the best chosen ideas the participant will engage with the designers of Tanishq to co-create the jewelry for the product line. In order to facilitate the participation, Tanishq created website www.myexpression.tanishq.co.in where in the customers can sign up and submit the idea. The online platform helped the company to reach the wide range of customers and received innovative ideas.

Humara CD .com an online website which gives customers an option to co-create the CD which suits the tastes and preferences of

the customers. The website gives customer an option to choose from over 1, 00,000 songs of both popular and rare music and then design their own CD which is delivered to customers at their doorstep. Taking this co-creation further step ahead Humara CD gives customer choice of designing Mp3 upto 200 minutes or 40 songs @ Rs. 199 Or CD upto 76 minutes @ Rs. 275. The website helps Hamara CD to give customer the access to develop their own MP3 and creating an active engagement between company and the customers. It is very much evident from the afore mentioned examples that how technology has helped to transform the interaction of product co-creation between the company and the customers. Transforming the traditional view of product which was company centric, technology has helped company to create equal stakes of customers. Sometimes termed as prosumers, were customer produces and consumes.

Co-Creating "Price" using Technology

Price being one of the only P's in marketing mix which is revenue generating rest other 3 P's are costs to the companies. Hence co-creating value through price will play a pivotal role for companies.

The Humble Bundles are a series of collections ("bundles") of digital creations that are sold and distributed online at a price determined by the customers who purchase the game or media. Humble Bundle works on concept what is called as PWYW (pay what you want) giving customers an option to determine

their own price that suits them. Usually the price range is given between 10\$ to 100\$ and customer can choose to pay anything between these prices. Apart from giving option of prices the website also allows customer to create their own custom price.

In order to make this business model more transparent the company also furnishes the real time update of each bundle giving customers understanding as in how much the bundle is worth and how many users along with their respective platforms have published.

Table 1: Humble Bundle Co's Payment and Purchase Details

Total payments:	\$334,670.47
Number of purchases:	53,979
Average purchase:	\$6.20
Average Windows:	\$5.66
Average Mac:	\$6.85
Average Linux:	\$8.41

Source: company website

Humble Bundle also encourages charity in order to motivate customers to pay more than 0\$. This is unique model of pricing wherein both company and customer co-create the price that carries the best value for both of them.

Co-Creating “Promotion” using Technology

We are acquainted to the concept of word of mouth which makes the customer the brand ambassador of the company and how this word of mouth has shifted to word of mouse with the changing technology. Social

platforms empower the customer to share their experiences with the other customers generating an electronic value exchange.

One of the most effective user generated content is in the form of reviews .Tripadvisor.com invited the users to share their experiences good or bad and review the various hotels across globe. Reviews directly influence customer decisions, such as travelers who look up hotels or attractions on travel review site TripAdvisor before booking. Companies put links of their hotels on tripadvisor page and invites the users to rate and review. When the customers reviews and rates the hotel it becomes the word of mouse and effects the behavior of other customers who read these reviews before making the booking.

Gaana.com which is an online free song streaming website offers its users a wide range of songs which they can listen. The company encourages its users to share the songs which they are listening on their face book pages creating a user driven promotion for gaana.com. These types of promotional campaigns have been more effective and less expensive for companies as the users are able to connect more aptly with these campaigns. Now a day's hardly any company which is not making use of these forums to connect and promote their products and services at the same time keep customer at the heart of it.

Co-Creating “Place” using Technology

Rate of bank visits for cash withdrawal has considerably dropped in recent years. Thanks

to the automated teller machines which has made life much easier.

State Bank of India which is largest PSU bank of India with huge presence in rural India as well. The bank has been able to reach to the far flung areas of India with the help of technological tools making its services accessible to large chunk of customers. As on 2013 the bank had more than 27000 ATMs installed both in urban and semi urban areas. Speaking at the occasion, bank chairman said ATM was the most innovative product in the banking space. This was only possible when bank had been able to understand the requirements of its customers and creating a joint solution for the same. It is pertinent to further add here how with help of co-creation and technology, the concept of place is transforming. Mobile ATMs or what can also be called as ATM on wheels makes the availability of banking services more flexible. When sports events or any other events are organized which are usually in outskirts of city, the organizers of such event approach to the bank for making Mobile ATM available at the place of event. This not only helps the organizers but also bank to provide easy place of access to the customers.

Ebay an e-commerce company which gives customers an option to sell as well as purchase online. The company hosts new as well as used products for sale. Ebay is having two types of customers one who sells on the website and one who purchases from the website. If we look at this business model we get an understanding of the convergence

of digital space and physical place where company holds the space and customers own the place. Ebay does not carries any inventory of its own rather the products are at the sellers place. Similarly customers order the delivery of product to the place of their convenience. So at the heart of this company lies the place of selling and place of buying using digital space as intermediary. The co-creation of this amalgamated place and space helped Ebay to with stand the dotcom bubble as well. Further the company keeps on developing a stronger network between its sellers and buyers for effective creation and delivery of the value.

Jabong is one of the largest e-commerce company in India. The company estimated that 70% of its business can come from rural India. In order to get access to the customers company was able to co-create a new mechanism of delivery. The customers are ready to collect their product from any landmark place of their area which can be a shop, petrol pump, STD booth etc. Thus the place of mutual benefit has been created by the company and the customer.

MODEL SPECIFICATION

In order to explore the innovative role of IT in co-creation of 4Ps and its impact on profit, we propose algorithm to model an organisation as a space and its co created products, price, promotional activities and place of selling and warehousing (with the intervention of Information Technology) as agents using agent based modeling with help of NetLogo. The model provides environment where

these agents (with their different co-created percentages) interact and impact the profit percentage of the company. The model helps in simulating the real scenario where if we set the targets of the co-created percentage of 4Ps (with IT intervention) for an year then the model will depict us the expected percentage of profit change for the company for the year in question. Thus proposed model attempts to explore innovative role of IT in co-creation and predicting overall profitability of the company.

Algorithm

Step 1: In order to perform the simulation, first of all the percentage change of all agents is calculated using the formula below

Formula 1:
$$z_i = (x - y) / y * 100$$

where

z_i is % Change of Agent i ($i = 0$ for profit, $i = 1$ product, $i = 2$ for price, $i = 3$ place and $i = 4$ for promotion)

x is agent(profit, product, price, place or promotion) value of current year

y is agent(profit, product, price, place or promotion) value of previous year

Step 2: The percentage changes in the values of agents over the years as calculated in step 1 can be used to calculate the impact of percentage change in 4Ps agents on profit agent using the following formula:

Formula 2:
$$Avz_i = \sum (z_i) t / t$$

where,

$Avz_i(\%)$ is the average percentage change of agent i ($i = 0$ for profit, $i = 1$ product, $i = 2$ for price, $i = 3$ place and $i = 4$ for promotion)

z_i is % Change of Agent i ($i = 0$ for profit, $i = 1$ product, $i = 2$ for price, $i = 3$ place and $i = 4$ for promotion)

t is number of years in question

Formula 2 will give us the overall impact of each agent (4Ps) on Profit agent that is individual impact of each P on company profit is reflected. However overall impact of co- created 4Ps on company's profit for current year should be calculated which will give an impact ratio and will be helpful for forecasting.

Step 3: Overall impact of co- created 4Ps on company's profit for current year can be calculated as follows:

Formula 3:
$$C4P = \sum (Avz_i) / 4$$

where

C4P is Combined contribution of co created 4Ps(%)

$i = 1, 2, 3$ and 4

$Avz_i(\%)$ is the average percentage change of agent i ($i = 1$ product, $i = 2$ for price, $i = 3$ place and $i = 4$ for promotion)

Step 4: Using this impact ratio calculated in step 3 for the current year, if we set the target of extent of co-creation of 4Ps using information technology for next year, we can predict the overall change in profit of the company for coming year as:

Formula 4:
$$P_{ex} = Avz_0 / C4P * T4P$$

where

Pex is the expected profit calculated because of co creation of 4Ps for next year

T4P is average percentage of co creation of 4Ps.

Avz0 (%) is the average percentage change of profit agent (i= 0 for profit)

C4P is Combined contribution of co created 4Ps (%)

In order to test the proposed algorithm, simulation has been performed using NetLogo. Following figures depict model based on proposed algorithm. If we set the targets of 4P's contribution percentages of co-created product to 6.2 %, co created price to 3.4 %, co-created place to 1.2 % and co-created promotion to 5.6 % as shown in Fig. 2, then we can forecast the profit change for the year in question which is 6.9 % as shown on plot in Fig. 3

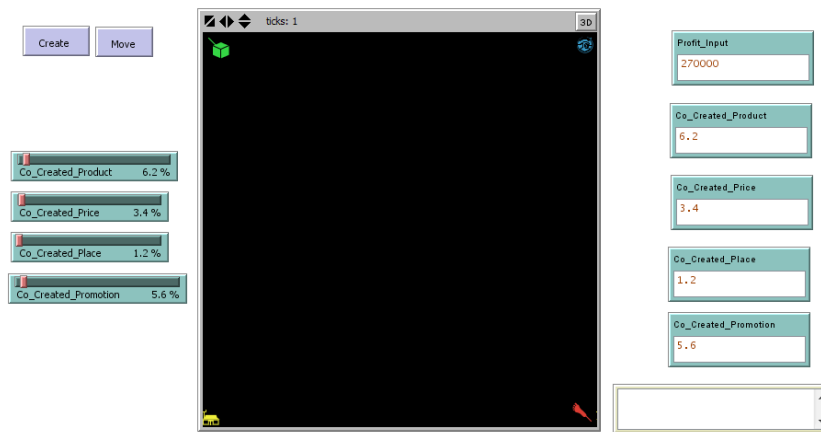


Figure 2: Percentage of Co- created 4Ps through IT Intervention

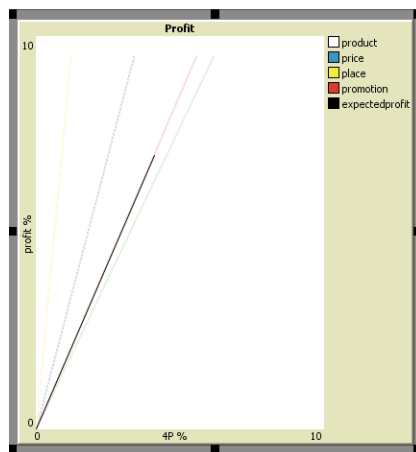


Figure 3: Plot depicting Co-created 4Ps with IT intervention & forecasts it's contribution to company's profit

CONCLUSION

Information Technology has revolutionized the field of marketing and has created an interactive platform for the company and customers thus building zone of experiences. Experiences which can be shared and transferred for value creation. Customer participation in various functions of marketing has successfully provided competitive advantage. Thus Future of companies will depend on how well the companies are able to harness the dividends of technology especially in context of co-creation. Managers have to

understand how the role of technology can be effectively incorporated for taking the insights of the customer and shift the company centric view to customer centric. Co-creating the marketing mix with the help of technology has becomes easier for the companies. Technology has played pivotal role in converging company and the customer, opening new doors of opportunity but at the same time has posed new challenges for the organizations. It is evident that co-creation is next emerging area and Information Technology has taken it to next level all together. Further, proposed algorithm for developing agent based model can be used for simulating which can help companies in predicting and computing the impact of technologically co-created product, price, place and promotion on company's profit.

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