

# Innovating Together: Unveiling Open Innovation, Co-Creation, and Social Media in Malaysian Telecommunications

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## Abstract

This study explores the synergy between open innovation, customer co-creation, and social media in Malaysia's telecom sector. Businesses are increasingly using open innovation to remain competitive, merging internal and external ideas. Customer co-creation involves active customer participation in innovation. This research investigates how these strategies intersect with social media, a crucial platform for engagement and product development. Through qualitative data collection from TelcoX, a Malaysian telecom company, the study reveals how open innovation can be tied to customer satisfaction, guiding marketing strategies, and fostering customer relationships. A Conceptual Research Model for Open Innovation Through Customer Co-Creation Using social media is proposed, offering a framework for businesses aiming to boost their competitive edge. The research highlights TelcoX's approach to co-creation, including customer feedback, information sharing, ideation, engagement, and advocacy. By leveraging customer insights, TelcoX enhances offerings and cultivates tailored solutions. This paper contributes insights into integrating open innovation, co-creation, and social media in telecom. The proposed model offers practical guidance for businesses, enhancing their innovation and adaptation in a dynamic business landscape.

**Keywords:** Open Innovation, Co-creation, Social Media, Telecommunications, Customer Engagement

## Introduction

Chesbrough (2003a) states that open innovation combines internal and external ideas, serving as a catalyst for companies to advance their technological capabilities. Recent research in organizational science emphasizes the increasing importance of open innovation (Huizingh, 2011; Correia & Ribeiro, 2021; Al-Esmael & Ratten, 2022), where many stakeholders are involved in a collaborative process, leveraging knowledge from sources outside the boundaries of the organization. This approach empowers organizations to

leverage innovative ideas from both internal and external channels, ultimately giving them a competitive edge in today's highly competitive business landscape. Given the transformative role of innovation in addressing customer demands, adapting to evolving technologies, and navigating increasingly intense competition, open innovation is emerging as an important strategy for organizational success.

Companies are increasingly embracing open innovation practices to develop new products and highlight their core capabilities (Huizingh, 2011; Al-Esmael & Ratten, 2022; Park & Lee, 2022). This requires the identification of collaborative opportunities that produce mutual benefits. Open innovation encourages businesses to explore innovative concepts and methodologies, including inbound and outbound innovation approaches. The level of stakeholder involvement plays an important role in determining whether the approach leans towards open or restricted innovation. In this context, Cheng and Huizingh (2020) introduced the concept of customer co-creation, characterizing it as a dynamic and interactive process that brings together producers and customers, facilitated by the business. In this process, customers actively participate in the organization's open innovation initiatives, contributing to the development of new goods or services. This interactive value generation process involves both suppliers and customers in value creation, further enriching the domain of marketing studies (Cheng & Huizingh, 2020). By looking at the unique context of the Malaysian telecommunications industry, this paper aims to make a significant contribution to the scholarly discourse focused on open innovation, social media, and customer-driven value creation.

## **Literature Review**

### **Co-creation and Social Media**

The use of social media as a marketing tool has gained significant attention in recent years, particularly in the context of Malaysian entrepreneurs, as the extensive usage of social media has created significant interest in utilizing this platform for commercial purposes (Hashim et al., 2016). Several factors have been identified that influence the use of social media for marketing purposes, including performance expectations, social influence, facilitating conditions, propensity to share information, viral marketing expectations, and pandemic fear. These factors have been found to contribute to the competitive advantage of entrepreneurs in Malaysia, helping them build strong customer relationships and establish their market presence. Understanding these factors is crucial for business owners to develop effective strategies and make informed decisions regarding the use of social media as a marketing tool to promote their businesses (Bakar & Zaini, 2022).

In the realm of open innovation and customer co-creation, social media plays a vital role as a tool for businesses to engage with customers, build brand awareness, and develop new products and services. By incorporating social media into the conceptual model, the study emphasizes the potential of social media for open innovation and highlights the need to consider it in the development of co-creation strategies with customers. This inclusion allows for insights into how telecommunication companies in Malaysia can leverage social media platforms for open innovation and develop effective strategies to maximize their potential for co-creation with customers (Barlatier et al., 2022).

### **Related Models**

The review of existing models related to open innovation, customer value co-creation, and social media has informed the development of the proposed conceptual model for this

research. Various models, such as the Open Innovation Model, the Firm's Marketing Innovation Model, and the Co-creation Design Model, have been considered for their suitability and relevance to the study's objectives. Additionally, models specifically focused on the role of social media in open innovation, such as the Open Innovation and Social Media Intelligent Model and the Configurations of Social Media-enabled Strategies for Open Innovation, have been examined. However, these models do not singly combine open innovation, co-creation and social media in a single coherent model and neither in the perspective of the telecommunication companies. Despite that, through a review of these models, valuable insights into the potential of social media as a tool for open innovation and customer co-creation could be obtained, contributing to the development of effective strategies in the telecommunications industry in Malaysia (Barlatier et al., 2022; Bakar & Zaini, 2022).

### **Telecommunication Industry in Malaysia**

The telecommunications industry in Malaysia has experienced rapid growth since the 20th century, driven by the rapid change in technologies and shorter product life cycles. The Malaysian Communication and Multimedia Commission (MCMC) is responsible for regulating the industry, ensuring guidelines, policies, procedures, and service quality. The MCMC, established under The Malaysian Communication Act of 1998, has been facilitating and coordinating the growth of the sector.

The market for fixed-line services in Malaysia has been stagnant for about ten years due to the competition in the mobile market, which has risen to 145% in 2014, with 45 million subscribers. The broadband Internet subscriptions have also been spectacular, with 67% of household penetration in 2014. The Malaysian telecommunications industry has been led by five prominent service providers in the past decade, with the oligopoly concept implemented, where the market is equally shared by a small number of service providers. This oligopoly model covers areas between pure monopoly and monopolistic competition, resulting in standardized services.

In the internet-driven society, communication via social media has become a norm, with companies using social media to engage, improve loyalty, and efficiently market their products to customers. The existence of official social media sites of telecommunications companies demonstrates the potential for open innovation and co-creation in the industry. By leveraging social media for open innovation and co-creation, Malaysian telecommunications companies can enhance their customer experience and maintain their position in the competitive global economy.

### **Research Methodology**

The data collection process in this study is highlighted as a pivotal element of the research, as it lays the foundation for deriving meaningful insights. The chosen qualitative data collection methods involve a multifaceted approach, encompassing the use of various methods to gather comprehensive information. These methods include semi-structured interviews, personal observations, document analysis, and audio-visual materials. By employing a diverse range of data sources, the research aims to capture a holistic view of the subject under investigation. The emphasis on multiple sources aligns with the principle of triangulation, which plays a vital role in enhancing the accuracy and validity of the data collected. This methodological approach enables cross-checking insights and findings from different sources,

ensuring a robust and well-rounded understanding of the research topic. For the purpose of this paper, the focus of analysis will only be on the interview data.

This study, conducted within a telecommunications organization in Malaysia, employs a qualitative research methodology to facilitate a profound comprehension of how individuals perceive and experience their work and daily lives within the corporate context. This approach is in alignment with the perspective presented by Ehigie and Ehigie (2005), who assert that qualitative research is inherently exploratory and interpretive in nature. The semi-structured interviews in this investigation were conducted in strict adherence to the interview guidelines and procedural framework outlined by Jacob and Ferguson (2012). This approach affords interviewees the autonomy to freely articulate their thoughts and insights concerning the study, thereby achieving a harmonious equilibrium between the researcher's imperative to gather specific information and the interviewee's capacity to convey their perspectives in an unstructured manner.

Employing a qualitative methodology, the interviews were conducted following a predefined set of questions outlined in an interview guide template. The interview inquiries encompassed a range of subjects, including demographic particulars, professional experience, involvement in open innovation projects, customer engagement, and interactions with social media platforms.

Thus, following a series of semi-structured, in-person interviews involving 16 participants, each lasting an average of 60 to 120 minutes. Additionally, the interviews were arranged via phone calls and conducted individually face-to-face in private settings, maintaining a conducive environment for open and detailed discussions. Ultimately, it became evident that data saturation had been reached upon the conclusion of the twelfth interview. The participants are employees and customers of a telecommunications company in Malaysia (named Telcox) coming from various business units, spanning the internal business process from product ideation to retirement. The selected interviewees, identified based on departments, job positions, and roles, were recommended by their superiors and peers due to their subject matter expertise; exhibiting a high likelihood of participating in innovation initiatives, actively engaging with customers, and utilizing social media platforms. Hence, through these interviews, the study aims to gain comprehensive insights and perspectives directly from individuals deeply involved in the subject matter. This strategic choice ensured that the interviewees possessed relevant experiences and insights pertinent to the study's objectives as well as enhancing the research's validity and relevance.

Transcripts from these interviews underwent thorough analysis using NVivo software. This analysis involved a careful coding process in which selected excerpts were mapped into a developed conceptual framework, which included key thematic elements. Through this process, meaningful codes are systematically obtained. This critical coding process culminated in the comprehensive findings of the study, providing valuable insight into the research focus area.

### **Model Development**

The reference to "The Open Innovation Model" by Bigliardi et al (2012), "The Firm's Marketing Innovation Model" by Corte et al (2015), and "The Open Innovation Funnel" by Chesbrough (2003) underscores the importance of open innovation as a key element of the conceptual research model. The Open Innovation Model proposed by Bigliardi et al (2012) holds a prominent position in the realm of open innovation literature owing to its simplicity. It aligns seamlessly with the conceptual framework underpinning the current research, primarily by

accentuating the significance of external actors and offering strategic approaches for fostering innovation within the telecommunications industry through collaborative endeavours. In combination, these references highlight the critical role of open innovation in the innovation process, particularly in the context of involving customers in the innovation process. The conceptual research model attempts to build on these references by exploring how telecommunication companies in Malaysia can embark on open innovation through customer co-creation using social media.

The second element presented in the conceptual research model is customer co-creation of value, which refers to the active involvement of customers in the innovation process, whereby they contribute their ideas, knowledge, and skills to co-create value with the company. The significance of external stakeholders and the exchange of information between customers and businesses, with a particular emphasis on the value attributed to customer input within organizations, is underscored by Ercsey (2016). The importance of consumer feedback and factoring in insights while making decisions is emphasized by (Adikari et al., 2021). The key importance of social media in promoting co-creation in data-intensive situations is highlighted by (Chesbrough, 2003).

The inclusion of social media in the conceptual model is significant because it highlights the potential of social media as a tool for open innovation and emphasizes the need to consider social media in the development of strategies for co-creation with customers. By incorporating social media into the conceptual model, the study can provide insights into how telecommunication companies in Malaysia can leverage these platforms for open innovation and develop effective strategies to maximize the potential of social media for co-creation with customers. Li et al (2014) emphasize how social media apps are utilized to facilitate online engagement and collaboration as well as to encourage and gather feedback and ideas for new products and services. According to Bakar and Zaini's (2022) study, social media use has drawn the attention of researchers and organizations owing to its efficacy and efficiency as a marketing tool in the corporate sector. Social media-enabled strategy configurations for open innovation, firm performance, and adoption barriers (Barlatier et al., 2022). When creating social media strategies for open innovation, managers are urged to think about their organizational competencies, capabilities, and strategic goals. These studies underscore the utility of social media as a potent tool for fostering interaction with customers, thereby serving as a catalyst for the realization of open innovation.

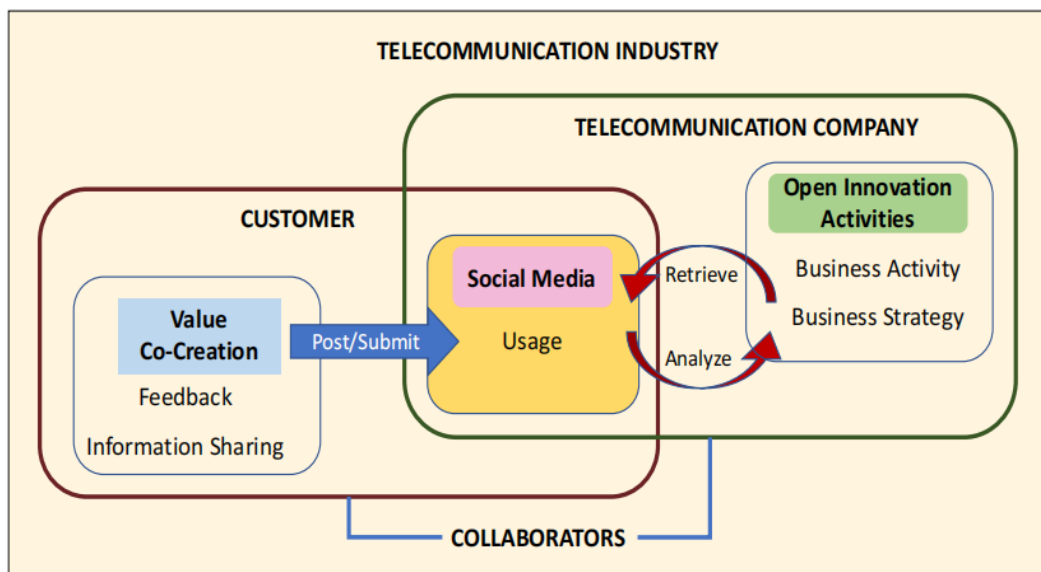


Figure 1. Conceptual Research Model for Open Innovation Through Customer Co-Creation Using Social Media

Based on the research model and literature reviews, there are five constructs being taken into consideration and they are categorized into three main themes, which are “open innovation”, “co-creation” and “social media”. The categorisation is shown in Table 1.

Table 1  
Derived Constructs for the Conceptual Research Model

Themes	Constructs	References
Open Innovation	Business Activity	Sembiyeva and Ibragimova (2022), Chatterjee et al. (2022)
	Business Strategy	Chesbrough and Appleyard (2007), Bigliardi and Dormio (2009) Vanhaverbeke et al. (2014)
Co-creation	Customer Feedback	Roser et al. (2009), row et al. (2011), Russo-Spena (2012), Adikari et al. (2021)
	Customer Information Sharing	Frow et al. (2011), Russo-Spena, (2012), Bigliardi et al. (2012) Moghadamzadeh et al. (2020)
Social Media Usage		Lim et al. (2019), Zhan and Liu (2021), Bakar and Zaini (2022), Barlatier et al. (2023), Adikari et al. (2021)

**Results and Discussions**

The findings are discussed based on the research themes that were explored during the literature review namely "open innovation", "customer value co-creation", "social media". The summary of sample excerpts for each theme and construct retrieved during the analysis is depicted in Table 2.

Table 2

*Derived Excerpts based on Constructs and Themes*

Themes	Constructs	Excerpts
Open Innovation	Business Activity	<i>That means from the first idea generation until the product is produced. So basically, ideation, roadmap, strategy, in terms of the product, for the mass market, we'll go through the process</i>
	Business Strategy	<i>There are three things we control. One is social media, press and we have our own PR team. And each unit has a person in charge to ensure the interaction with users is efficient and consistent.</i>
Co-creation	Customer Feedback	<i>Starting last year we used those elements of the voices of customers, one of the factors for us to go-to-market. Meaning, that we have an approach to how we engage with customers. We call that design thinking approach, whereby we will engage with customers to understand their challenges.</i>
	Customer Information Sharing	<i>From commissioning, and discovery of the telco's product, to provisioning fulfillments and then, when they use our services and then, whenever they make a payment. So, we want to engage at each level, their sentiments. Are they happy when they subscribe to us?</i>
Social Media Usage		<p><i>Social Media has influenced and indeed plays a big role when it comes to the promotion of a new product. For example, how do you want to create customer awareness?</i></p> <p><i>So, it's kind of a collaborative manner whereby, the Customer Support Center will pick up the issue on social media and actually exchange messages with the customer. This has obviously sped up the resolution of any of the customers' pain points.</i></p> <p><i>People also actually post their complaints on the bloggers' blogs, and their social media accounts.</i></p>

**Open Innovation: Business Activity**

There is a systematic business process implemented by TelcoX, as mentioned by several of the employees, where they engage in co-creation activities with customers to better understand their needs and preferences. This includes gathering feedback through surveys, focus groups, and online communities, as well as collaborating with customers to develop new products and services. The telco has also established a dedicated business unit that specifically focuses on managing and improving the customer experience. This unit is tasked with the responsibility of gathering feedback and measuring the customer level of satisfaction and using it to enhance their overall experience with the company's products or services.

In the realm of open innovation strategies within business activities, TelcoX unveils a customer-centric approach that bridges innovation with customer satisfaction. Amid the

competitive business landscape, Telco's commitment to enhancing customer experience takes centre stage. Through the establishment of a dedicated team, Telco proactively ensures responsiveness to customer needs and expectations. This approach is exemplified by the implementation of the Net Easy Score (NES), a straightforward customer satisfaction measurement tool. By capitalizing on customer feedback gathered through NES, Telco forges a stronger connection between innovation and the customer experience, solidifying customer loyalty and engagement.

Central to Telco's open innovation initiatives is a meticulous evaluation process, epitomized by the gated process. This multifaceted evaluation mechanism not only scrutinizes customer feedback and novel ideas but also aligns closely with the Product Life Cycle. As products journey through development stages, ranging from infancy to decline, the gated process adapts its evaluation criteria. This seamless alignment ensures that customer inputs are channelled appropriately, fostering innovation that harmonizes with the stage of product evolution. By integrating this structured approach, Telco transforms customer insights into tangible and impactful innovations.

The fusion of open innovation and a customer-centric ethos underscores Telco's success in navigating the intricate realm of business activities. Telco's strategic embrace of the Product Life Cycle within the gated process amplifies the impact of customer inputs on innovation outcomes. This harmonious integration resonates with the company's broader open innovation strategy, reflecting a holistic approach that not only spurs innovation but also reinforces customer satisfaction. Telco's pioneering efforts serve as a testament to the potential of open innovation strategies in business activity, illustrating how synergizing innovation and customer-centricity can elevate a company's competitive edge and market positioning.

### **Open Innovation: Business Strategy**

Within the sphere of business strategy, Telco demonstrates a pioneering approach to open innovation by harnessing customer experiences to bolster brand loyalty and fuel continuous subscriptions. A key facet of this approach involves embracing a customer-driven marketing paradigm, tapping into the potency of word-of-mouth promotion. Customers who exhibit loyalty to Telco become brand ambassadors, endorsing the company through positive feedback and personal recommendations. This word-of-mouth advocacy serves as a dynamic marketing tool, extending Telco's influence through customers' social and professional networks. By actively listening to customer feedback, Telco shapes its marketing strategies to better align with their preferences, underscoring the transformative power of customer insights in driving strategic decisions.

Telco's commitment to deepening customer relationships is evident in its exceptional customer service, personalized suggestions, swift issue resolution, and seamless user experience. This concerted effort to enhance customer experience is proven to heighten brand loyalty and foster enduring customer retention. The strategy is further reinforced by Telco's meticulous control over all corporate marketing touchpoints, including social media, press, and public relations. This meticulous control guarantees consistent messaging and branding across every customer interaction, playing a pivotal role in cultivating a robust brand identity.

The significance of this second sub-theme within the realm of open innovation lies in its emphasis on customer-centric marketing strategies as a driving force behind brand loyalty and long-term customer engagement. By artfully interweaving customer experiences and



feedback, Telco effectively tailors marketing campaigns and nurtures profound relationships with customers. This approach showcases how open innovation can manifest not only in product development but also in shaping comprehensive business strategies that resonate with the needs and aspirations of the customer base.

### **Co-creation: Customer Feedback**

*Customer Satisfaction:* Customer satisfaction emerges as a pivotal catalyst for Telco's co-creation endeavours. Satisfied customers willingly engage with Telco, providing invaluable insights that shape future product and service innovations. This dynamic manifests in customer feedback, innovative ideas, and suggestions for refining pricing strategies. Telco's adept responsiveness to these inputs fosters trust, credibility, and loyalty, resulting in a virtuous cycle of positive interactions and enhanced sales. Evidently, Telco's co-creation approach thrives when customer satisfaction acts as the bedrock, propelling engagement and mutual growth.

*Customer Dissatisfaction:* Customer feedback extends its influence beyond accolades, encompassing dissatisfaction as a wellspring for positive transformation. By addressing customer discontent, Telco identifies areas requiring enhancement, steering the company toward a continuous journey of refinement. Whether it's concerns about service quality, personnel conduct, or product functionality, customer dissent serves as a catalyst for transformative change. This proactive approach not only resolves immediate grievances but also fuels Telco's commitment to fine-tuning offerings, elevating customer satisfaction, loyalty, and overall brand perception.

### **Co-creation: Customer Information Sharing**

*Customer Ideation:* The consensus among Telco employees reveals a unified recognition of the pivotal value that customer ideation brings to co-creation. This collective understanding highlights customer ideation as a potent mechanism for mutual value creation. This involves soliciting ideas and suggestions from customers that can drive product improvement, unearth new opportunities, and elevate the overall customer experience. Telco employs platforms such as online forums, physical meetings, and focus group discussions to engage customers in the ideation process. The company diligently evaluates these suggestions, collaborating with relevant departments to determine feasibility and potential impact. By integrating customers in the ideation phase, Telco gains profound insights into their preferences, facilitating the development of solutions that better address their needs.

*Customer Engagement:* Customer engagement emerges as another integral co-creation facet, manifesting through survey and focus group interactions. Telco assigns a dedicated division to engage with customers based on specific requirements and collaboratively develops questionnaires. The insights from these engagements inform various departments, facilitating informed decision-making for product development, marketing, and customer service. By tapping into customer sentiments throughout their journey, Telco ensures satisfaction and loyalty by continuously refining its services.

*Customer Advocacy:* Customer advocacy assumes a crucial role in the co-creation ecosystem, representing customers endorsing and promoting Telco's offerings based on positive experiences. Telco's "Net Promoter Score" system gauges customers' likelihood to recommend products or services to acquaintances, allowing the company to assess the customer journey comprehensively. Customer advocates influence others, fostering a cycle of word-of-mouth advertising that fuels revenue growth. Advocacy also offers insights into

areas of strength and improvement, enabling TelcoX to enhance offerings and foster greater satisfaction.

*Customer Experience:* TelcoX orchestrates an exhaustive involvement of customers in product and service development, spanning ideation to launch. By engaging both high-end and low-end users, the company gathers insights that reflect diverse customer needs and preferences. Prototyping and collaborative iterations with customers refine products to align with their expectations. This holistic approach enhances customer satisfaction, optimizes offerings, and bolsters TelcoX's market presence.

In addition to these dimensions of co-creation, 'Customer Information Sharing' emerges as a powerful tool within the co-creation paradigm. It involves customers sharing information with employees, fostering a better mutual understanding and alignment of shared values (Moghadamzadeh et al., 2020). This sharing not only enhances offerings and refines strategies but also amplifies TelcoX's brand influence and nurtures tailored solutions. TelcoX's commitment to integrating customer insights across these dimensions underscores the integral role of customers in shaping the telco's trajectory.

### **Social Media Usage**

Social media plays an important role for TelcoX. It allows direct interaction with customers across various platforms such as Facebook, Instagram, Twitter and others. This helps in gathering feedback for better customer retention and provides insight into customer preferences. TelcoX maintains an internal business unit for efficient social media management, ensuring consistent messaging, immediate customer support and alignment with corporate objectives. Additionally, social media analytics help monitor customer sentiment and identify areas for product improvement. Open innovation is encouraged through customer input. In short, social media connects TelcoX with customers, fosters innovation, and promotes a customer-centric strategy.

### **Conclusions**

The findings of this study were examined, scrutinized, summarized, and synthesized into a model that could be referenced and implemented by any telco wanting to deploy open innovation, regardless of where the telco is in the co-creation process. This model could be used to assess the viability or readiness of a telecommunications company to engage in open innovation. It might also be used to supplement, improve, and revitalize the telco's current open innovation programme. Finally, it might be used to discontinue or resume the Telco's current open innovation programme.

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