

## Co-creation Models for the Resolution of Social Problems

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**Abstract.** Developing rapidly alongside the advances in IT(Information Technology), complicated and diverse social problems have emerged in modern society. Conventional knowledge and technology experts in certain areas are not enough to resolve social problems that require approaches from diverse viewpoints. Therefore, the Korean government is promoting Government 3.0, which induces diverse community stakeholders to participate in the process of policy promotion. To implement public-centered policies, diverse problem related stakeholders should first be allowed to participate directly in the process of policy making and implementation so that they can discuss solutions and evaluate policies from different viewpoints. As a concept similar to Government 3.0, “co-creation,” in which firms and consumers jointly participate and cooperate to make new values and resultant profits are shared among all participants, is emerging as a major challenge in the management field. For that reason, this study is intended to develop a co-creative problem-solving model in which diverse stakeholders share visions and experiences to create new values to solve social problems. To this end, both the business model canvas, which is a business model development methodology, and business process modeling techniques were utilized. To validate the applicability of the developed co-creation model it was applied to a rising generation job mismatch problem. The contribution of this paper is also discussed.

**Keywords:** Co-creation, Business model, Resolution of Social problem

### 1. Introduction

Modern society have complicated and diverse problems such as parking problems, creating jobs, and constructing nuclear power plants. Opposition is intensified among individuals who live in communities where complicated and diverse social problems continuously exist, sometimes due to conflicts among the stakeholders as well as the social problems. To solve these social problems, the national government and local governments seek solutions to problems and have implemented and promoted related policies as well. However, in many cases, the problems are not solved properly either because of policies for administrative opportunism or the results of the policy

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implementation are not satisfactory due to complicated interests, opposition, and conflicts among the stakeholders.

As such, neither the conventional knowledge, nor the technologies of the government, the local governments, or the experts in certain areas, are sufficient for the resolution of social problems that require approaches from complicated and diverse viewpoints. Moreover, since differentiated approaches are required depending on the purpose and direction of policies (Kim, 2015), the government that had hitherto been implementing supplier centered policies under the centralized government system came to promote consumer centered policies through Government 3.0, in which diverse stakeholders of communities are induced to participate in policy promotion processes (Song, 2011). However, although these consumer-centered policies have been attempted, the number of cases is still small and concrete methods and procedures have not yet been prepared.

To implement consumer-centered policies to solve social problems in communities, diverse stakeholders related to the problems should first be induced to participate directly in the policy establishment and implementation process to discuss solutions and evaluate the policies from diverse viewpoints.

With these considerations, the goal of this study is to utilize the concept of co-creation, meaning that diverse stakeholders share visions and experience in resolving social problems to create new values for the society. Specifically, a co-creative problem-solving model was developed that presents concrete methods and procedures through which the government, citizens, and diverse stakeholders can participate and work together in solving actual social problems. To this end, the business model canvas, which is a business model development methodology, and business process modeling techniques were reviewed.

## 2. Theoretical background

Although policies for the resolution of social problems are implemented, as administrative measures, by the government or local governments to diagnose social problems and achieve public purposes (Shin et al., 2015), since various social problems existing in communities appear to be due to structurally complex and diverse factors, implementing government policies alone has limitations in solving social problems.

To respond to this trend, the government has taken Government 3.0 as a new government operation paradigm for opening, sharing, communication, and cooperation. Government 3.0 is an innovation policy for promoting a transparent, competent, and service-providing government, thereby providing national customized services, and creating jobs and new growth engines for the country (Hong et al., 2015).

Nambisan and Nambisan (2013) stated that, because of their diverse and complex natures, the current problem solving method could not be maintained due to the government's retrenched finance and the fact that social problems require cooperative approaches with citizens and external partners.

The concept of "co-creation," which began in the management field. Co-creation is an idea means a system in which firms and consumers participate jointly, cooperate to create new values, and the resultant profits are shared among all participants. Through

co-creation, enterprises can obtain creative ideas, from consumers, which they could not have thought of by themselves. Through this process, consumers can actively participate in enterprise activities so that they can be provided with products and services that they want along with incentives from the participation (Hong et al., 2014).

### 3 Development of co-creation models for the resolution of social problems

The business model canvas methodology, which appeared recently, is effective for the clear presentation of the relationships between different components and is useful for the conception and visualization of business models (Hwang et al., 2013). The business model canvas contains all of the components included in the existing methodologies. To display the nine components effectively, they are arranged so that their relationships can be easily shown.

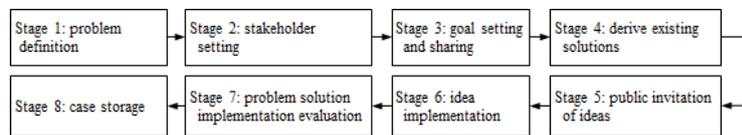
The components were defined based on existing studies that were intended to solve social problems and expert interviews. Centering on values that can be obtained through the resolution of social problems and the stakeholders necessary to implement them, the components of compensation, channels, core activities, and resources are as shown in Table. 1.

**Table 1.** Components of co-creation models for the resolution of social problems

Core activities	Value proposition	Compensation	Stakeholder
<ul style="list-style-type: none"> <li>·Idea collection</li> <li>·Opinion and information exchange</li> </ul>	<ul style="list-style-type: none"> <li>·Social problem resolution</li> <li>·Regional development and improvement of residents' environment</li> </ul>	<ul style="list-style-type: none"> <li>·Sharing of problem solving visions</li> <li>·Idea awarding and compensation</li> </ul>	<ul style="list-style-type: none"> <li>·Pentral and local government administrative agencies</li> <li>·Related specialized agencies</li> <li>·Related research institutes</li> <li>·Residents</li> </ul>
Core resource		Channel	
<ul style="list-style-type: none"> <li>·On-line platform</li> <li>·Administrative support system</li> <li>·Council and expert meeting space</li> </ul>	<ul style="list-style-type: none"> <li>·Council meeting</li> <li>·On-line platform service</li> <li>·Regional community</li> <li>·Private/public hearing and meeting</li> </ul>		

To develop social problem resolution models, the processes for the participation and cooperation of diverse stakeholders should be concretized first. Hence, a schematic process and conceptual diagram of all processes was composed and then process-modeling work was performed to concretize and schematize the relationships between the actual activities and the stakeholders, by stakeholder. To complete the model, these processes were used to provide a detailed description of the stakeholders' activities and implementation methods.

Fig.1 roughly shows the processes of co-creation models for the resolution of social problems. The first process in the modeling work is to compose a conceptual diagram of all the processes of the model used for obtaining solutions for social problems.



**Fig. 1.** Conceptual diagram of co-creation model processes for the resolution of social problems

Second, to develop social problem resolution models, processes should be concretized in accordance with the components and stakeholders defined earlier. Specifically, stepwise procedures and methods for the stakeholders defined in the components to derive social problem solutions should be presented. Therefore, the processes for social problem resolution can be defined step-by-step by utilizing the co-creative methods.

These processes demonstrate methods of identifying social problems and collecting stakeholders' ideas and opinions utilizing platforms such as homepage bulletin boards to solve problems.

Participants consist of administrative agencies as managing organizations for problem solving, operators and administrators of homepages and SNSs that can be operated by administrative agencies as operators, experts who study related social problems, hands-on workers of related organizations and expert/specialized organizations, general citizen participants who are interested or experienced in related social problems as residents, and policy committees as legislative organizations in administrative agencies and managing organizations for the final review and implementation of solutions for social problems composed of administrative agencies, external experts, and representatives of citizens.

Through the components and processes of the business model studied earlier, concrete methods and procedures of co-creation models for the resolution of social problems were prepared, Eight process stages were segmentalized and goals, methods, participants, implementation methods, and contents were concretized by stage.

To verify the validity of the developed co-creation model, the idea collection and application processes for job mismatch problem resolution were implemented with senior student and the graduates of a university.

The applicability of the co-creation model was checked by applying the model by stage for rising generation job mismatch problem solving. In the processes through which the stages ranging from problem definition to idea collection were implemented, through cooperation among the stakeholders, problem solutions related to increasing generation job mismatches could be discussed and derived from diverse viewpoints.

## 4 Conclusion

In this study, a co-creation model was developed for the joint cooperation of diverse stakeholders for the resolution of social problems. To this end, the business model canvas in the management field was utilized to derive components of the development

of problem solving models and business process modeling methods were utilized to concretize the implementation processes.

To check the goodness-of-fit of the developed co-creation model, the model was applied to an actual rising generation job mismatch problem in cooperation with related job finding institutions. Through the foregoing, the ideas and opinions of general citizens and diverse participants could be collected and the ideas and opinions were applied to the model again to verify the validity of the methods and procedures of the co-creation model.

A co-creation model was presented that can relieve problems in the top-down policy decision processes mainly implemented by government and administrative agencies and reflect the opinions and ideas of diverse stakeholders on policies. In particular, a new problem solving model was presented that can improve problems, such as job problems for which policies have been implemented for a long time period but for which actual results could not be produced or the demands of job offers and job seekers that could not be reflected, and can be utilized as methods and procedures for searching for solutions and policy decision making. To this end, the model was applied to an actual rising generation job mismatch problem to identify that the model can be utilized for actual social problems.

This study made a scientific contribution in that it presented a new methodology for the development of models for the resolution of social problems by utilizing the concept of co-creation and the business model methodology so that it can induce follow-up studies through the new methodology. This study also has made a practical contribution in that the presented methodology can be utilized as a guideline for the resolution of social problems as it presented concrete procedures and methods that can be applied by job finding related administrative agencies and specialized organizations. In addition, the results can also be utilized as practical policy making, as the present study collected the opinions of diverse stakeholders related to rising generation job problems such as job offerors, job seekers, and hands-on workers.

A limitation of this study is that although it presented diverse methods of obtaining stakeholders' ideas through co-creation, it shows only fragmental application processes in the form of idea contests through on-line settings. In future studies, diverse participation methods of co-creation should be included in the model to apply the model to actual problem solving in cooperation with administrative agencies and measure the effects as well.

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