Towards VIVA: A VIsual Language to Model VAlue Co-creation

Iván S. Razo-Zapata[1], Eng K. Chew[2], and Erik Proper[1]

[1] Luxembourg Institute of Science and Technology (LIST)
[2] University of Technology Sydney
{ivan.razo-zapata,erik.proper}@list.lu,
eng.chew@uts.edu.au

Abstract. We present a visual modeling language to design value co-creation. Our language is inspired by ideas from service science and marketing, whereas the (semi) formal representation and development is based on a language engineering method. The former two provide basic concepts and relationships to describe value co-creation. The latter offers sound guidelines to design languages that can be used to implement modeling tools. We show the application of our visual language using a basic example related to an educational journey, which illustrates the value co-creation process between a professor and students.

1 Introduction

Service design requires the design of value co-creation (VCC) as services provide an interaction space for customers and suppliers to co-create value [1]. For example, educational services such as teaching are essentially a form of value co-creation since they generate new knowledge together with associated learning experience for the students and the professor. Although there are different tools to design business ideas and services, they have three main drawbacks. First, they cannot differentiate between coordination, co-operation or collaboration relationships, which are relationships that have been identified to exist during a VCC process [1]. Second, they cannot represent cognitive and emotive aspects that collectively define the service experience of VCC [4]. Third, they mostly focus on the firm or the business ecosystem. This paper aims to contribute to filling the knowledge gap by providing a visual language to design VCC.

2 Language Specification and Graphical Notation

To design our visual language, we follow a seven-step method to design DSLs [2]. In this work, nonetheless, *we only present* the *Language Specification* and *Design of Graphical Notation* steps. Figures 1 and 2 present our meta model and the meta model with relevant subclasses respectively. Figure 1 presents main concepts and relationships. For instance, an actor *applies* an aspect, which is *integrated in* an encounter that facilitates the *creation* of value by allowing the *engagement* of actors [1]. The co-created value is ultimately *influenced by* the aspect(s) applied by actor(s). Furthermore, since actors may have different levels of engagement during VCC [3,1], we highlight such differences by defining subclasses for our concepts. Figure 2 shows the main concepts

(in grey) and the important subclasses to model the different types of engagement within value co-creation. Regarding the Aspect, Encounter and Co-created Value classes, the subclasses are defined based on ideas from marketing and management science communities [3, 1], which describe mostly three types of engagement: co-ordination, co-operation and collaboration [1]. Being co-ordination and collaboration the lowest and highest levels of engagement respectively (with co-operation seen as a moderate level of engagement) [1]. For clarity, we only present relationships for the coordination en- counter but similar relationships hold for the other encounters as well.

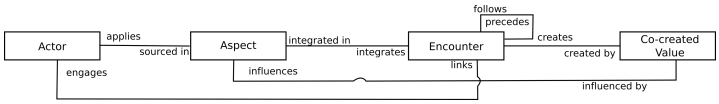

Fig. 1. Class view of the value co-creation process.

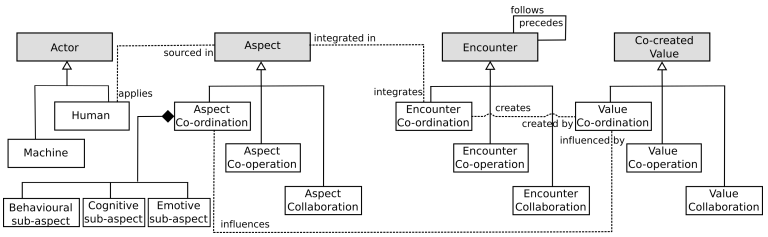

Fig. 2. Class view with sub classes for relevant concepts: Actor, Aspect, Co-created Value and Encounter. Note also that Aspect is a concept composed of Behavioural, Cognitive and Emotive elements.

Based on the subclasses defined in Figure 2, we designed the visual constructs that are presented in Table 1. On the one hand, we have defined constructs per each subclass in Figure 2 as they help to highlight different types of engagement during VCC. On the other hand, since Aspect is a composite concept, we draw three sub-aspects (Behavioral, Cognitive and Emotive) per each Aspect.

3 Case Study

Figure 3 illustrates the three levels of engagement (co-ordination, co-operation and collaboration) that compose a full educational journey with value being co-created (in the form of new knowledge) at each step during the teaching of a course. As can be observed, by combining basic constructs, one can easily build up an elaborate customer journey. We propose to place constructs within swim lanes that correspond to the three different levels of engagement. In this way, constructs related to collaboration, must only be placed within the collaboration swim lane.

Table 1. Visual constructs to design value co-creation.

Type of Engagement	Co-created Value	Encounter	Aspect	Actor
Co-ordination				
Co-operation				
Collaboration				

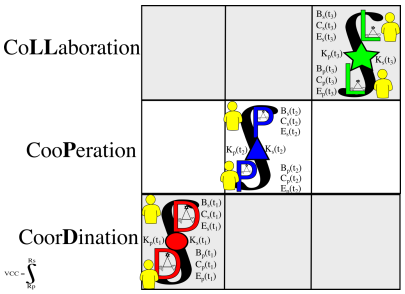

Fig. 3. Professor - student educational journey. a) VCC based on co-ordination between professor and student at t_1 = start time. b) VCC based on co-operation between professor and student at t_2 = lecture time. c) VCC based on collaboration between professor and student during t_3 = workshop time.

4 Conclusions and Future Work

We present a visual modeling language to design value co-creation. The required concepts and relationships to design value co-creation are inspired by research in fields such as marketing, management and service science [1, 3]. Although the current version is far from being complete, future versions of our visual language will allow us to design and analyze other forms of value co-creation within real-world case studies.

References

1. Mary FitzPatrick, Richard J. Varey, Christian Grönroos, and Janet Davey. Relationality in the service logic of value creation. *Journal of Services Marketing*, 29(6/7):463–471, 2015.
2. Ulrich Frank. Domain-specific modeling languages: requirements analysis and design guidelines. In *Domain Engineering*, pages 133–157. Springer, 2013.
3. Pennie Frow, Suvi Nenonen, Adrian Payne, and Kaj Storbacka. Managing co-creation design: A strategic approach to innovation. *British Journal of Management*, 26(3):463–483, 2015.
4. Kumar Rakesh Ranjan and Stuart Read. Value co-creation: concept and measurement. *Journal of the Academy of Marketing Science*, pages 1–26, 2014.