

# Conceptual Model for Decomposing the Value for the Customer

Susana Nicola\*, Eduarda Pinto Ferreira\*, J. J. Pinto Ferreira†

\* *GECAD - Knowledge Engineering and Decision Support Research Center, School of Engineering, Polytechnic Institute of Porto*, † *INESC Porto, Faculty of Engineering, University of Porto*

## Conceptual Model for Decomposing the Value for the Customer

Student: Susana Nicola  
Supervisors: João José Pinto Ferreira & Eduarda Pinto Ferreira

### Methodology

**Design Science in Information Systems Research** proposed by Hevner, A. R., S. T. March, et al. (2004), combined with the **Case Study Approach** as described by Dubé, L. and G. Paré (2003). The actual data collection and processing followed the **BNML** proposed by Oliveira & Ferreira (2011).

### Research Results

Proposal and Validation of a novel “Conceptual Model for Decomposing the Value for the Customer” integrating the illustrated concepts. This validation was further achieved through the usage of the Fuzzy AHP Method that enabled the development of a formal mathematical model for the CMDVC.

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## 1 Introduction

Value has been defined in different theoretical contexts as need, desire, interest, standard /criteria, beliefs, attitudes, and preferences. The creation of value is key to any business, and any business activity is about exchanging some tangible and/or intangible good or service and having its value accepted and rewarded by customers or clients, either inside the enterprise or collaborative network or outside. “Perhaps surprising then is that firms often do not know how to define value, or how to measure it” (Anderson and Narus, 1998 cited by [1]). Woodruff echoed that we need “richer customer value theory” for providing an “important tool for locking onto the critical things that managers need to know”. In addition, he emphasized, “we need customer value theory that delves deeply into customer’s world of product use in their situations” [2]. In this sense, we proposed and validated a novel “Conceptual Model for Decomposing the Value for the Customer”. To this end, we were aware that time has a direct impact on customer perceived value, and the suppliers’ and customers’ perceptions change from the pre-purchase to the post-purchase phases, causing some uncertainty and doubts. We wanted to break down value into all its components, as well as

every built and used assets (both endogenous and/or exogenous perspectives). This component analysis was then transposed into a mathematical formulation using the Fuzzy Analytic Hierarchy Process (AHP), so that the uncertainty and vagueness of value perceptions could be embedded in this model that relates used and built assets in the tangible and intangible deliverable exchange among the involved parties, with their actual value perceptions.

## 2 Methodology

The structure of this research work follows the “Design Science” approach proposed by the Hevner, March et al. [3] that “seeks to extend the boundaries of human and organizational capabilities by creating new and innovative artefacts”. This paper further builds on an Exploratory Case Study, following the “design criterion in exploratory case research” [4], as we seek the first validation of the proposed model. We were aware that, in this context, “although early identification of possible constructs can be helpful, it is equally important to recognize that it is tentative in theory building case research” [4]. This articulates with Hevner, March et al. [3] iterative approach with successive assessments and refinements in the theory building process.

## 3 Case Study Modeling and Analysis

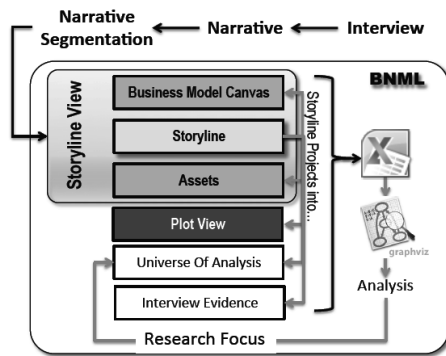
The Exploratory Case Study was conducted at a Small and Medium Enterprise (SME) in Porto along the second semester of 2010. Data analysis was supported by the so-called Business Narrative Modeling Language (BNML) proposed by Oliveira and Pinto Ferreira [5]. The BNML approach is illustrated in 1. As pictured, the story line is projected, onto the Universe of Analysis and onto the interview evidence. The coding scheme of Universe of Analysis was composed by combining keywords that define: a) the deliverable identification [6]; b) value temporal position [7]; c) forms of value [7]; d) and each deliverable projection onto the Reference Model for Collaborative Organizations Networks (ARCON) Endogenous and Exogenous components [8]. The interview segmentation into narrative patterns, pictured as deliverable exchange descriptions, allowed the construction of a Microsoft Excel table where each line establishes the relationship among all coding scheme terms and the interview evidence that provides the rationale for those relationships. Following the BNML approach, the Excel worksheet is then further processed using “pivot tables” in order to extract the desired perspectives onto the data model.

## 4 Conclusion

This research proposed and validated a novel “Conceptual Model for Decomposing the Value for the Customer” illustrated in 2 by relating the following concepts: a) Value for the Customer and the implied “Forms of Value” and “Value Temporal Positions” [7]; b) the “Endogenous” and “Exogenous” perspectives proposed by ARCON; c) the exchange of Tangible and Intangible Assets introduced by [6]. The validation was further achieved through the usage of the Fuzzy AHP Method that enabled the development of a formal mathematical model for the CMDVC that relates customer value (benefits/sacrifices) and the usage and construction of assets. As a result, managers will be able to identify and look into critical things, as wished by Woodruff [2].

## References

- [1] A. Lindgreen and F. Wynstra, “Value in business markets: What do we know? where are we going?” *Industrial Marketing Management*, vol. 34, no. 7, pp. 732–748, 2005.
- [2] R. Woodruff, “Customer value: The next source for competitive advantage,” *Journal of the Academy of Marketing Science*, vol. 25, no. 2, pp. 139–153, 1997.



### BNML Storyline View

- **Business Model Canvas:** Osterwalder [9]
- **Storyline:** Bjork and Holopainen's Game Patterns [10]; Uschold's Enterprise Ontology [11]; Allee's Value Exchange [6]
- **Assets:** Allee's Tangible and Intangible Assets [6]

Figure 1: BNML Approach

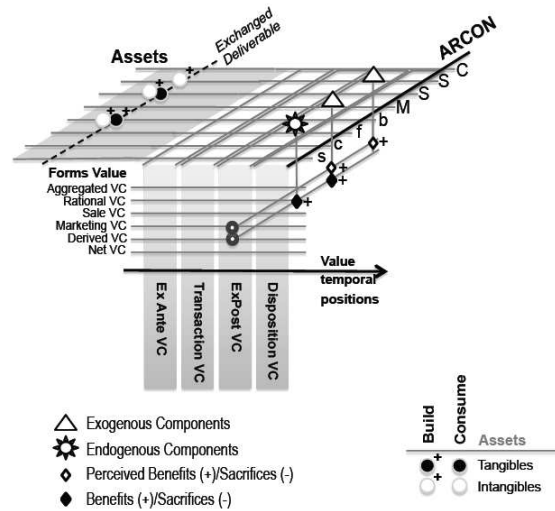


Figure 2: Conceptual Model for Decomposing the Value for the Customer (CMDVC)

- [3] A. R. Hevner, S. T. March, and et al, "Design Science in Information Systems Research." *MIS Quarterly*, vol. 28, no. 1, pp. 75–105, 2004.
- [4] L. Dubé and G. Paré, "Rigor in information systems positivist case research: Current practices, trends, and recommendations," *MIS Quarterly*, vol. 27, no. 4, pp. 597–636, 2003.
- [5] M. A.-Y. Oliveira and J. J. P. Ferreira, "Facilitating qualitative research in business studies: Using the business narrative to model value creation," *African Journal of Business Management*, vol. 5, no. 1, pp. 68–75, 2011.
- [6] V. Allee, "Value network analysis and value conversion of tangible and intangible assets." *Journal of Intellectual Capital*, vol. 9, no. 1, pp. 5–24, 2008.
- [7] T. Woodall, "Conceptualising value for the customer: an attributional, structural and dispositional analysis," *Academy of Marketing Science Review*, vol. 12, 2003.
- [8] L. Camarinha and H. Afasarmanesh, "ARCON reference models for collaborative networks," in *Collaborative Networks: Reference Modeling*. Springer Science+Business Media,LCC, 2005, pp. 83–112.
- [9] A. Osterwalder and Y. Pigneur, "Business models and their elements," in *Position Paper for the International Workshop on Business Models*, Lausanne, Switzerland,2002.
- [10] S. Bjork and J. Holopainen, *Patterns in game design*. Hingham MA,USA: Charles River Media, 2005.
- [11] M. Uschold, M. Uschold, M. King, and et al., "The enterprise ontology," *The Knowledge Engineering Review*, vol. 13, pp. 31–89, 1998.