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# Consumer-based value creation in launching green and smart innovation within the furniture industry; the case of the GSF research project

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## Abstract

*Value-creation focuses on the various dimensions along which customers perceive value. However, innovation is mostly related to tacit desires and even non-existent ones. The challenge is then to create new desires and the success to turn them to needs. The research was based on two different market studies addressing furniture manufacturers and consumers of the third age, regarding the development of a respective Green Smart Furniture (GSF) product. Data were collected from a random sample of 399 consumers from different regions of Greece during 2013 and from a random sample of 85 furniture manufacturers in Greece and Cyprus. We propose a customer-based value creation framework in a context where one of the firm's resources regards green and smart innovation. The research results and the project's course so far indicate that customers perceive value not only from the attributes of a product itself but also from the consequences of using the product and the goals achieved by it. For firms, this fact lies to three major factors: financial and investment factor, company resources according to the market demand and marketing.*

*Keywords: value creation, green innovation, smart innovation, consumers research, furniture*

## 1. INTRODUCTION

In today's knowledge-based society science and technology seem to be the main drivers for social and economic development. With competition both in goods and service markets, companies have to search for ways to retain their customers. As customers' demand is increasing, their participation in creation of a product or service and hence value today is a relevant object of scientists and practitioners' discussions. Although customer behavior literature has focused on the customer decision-making process regarding purchases, customers are not only responders but also value creators, and scholars need to focus on customer behavior in this regard (Xie, Bagozzi, and Troye, 2008). On the other hand, business leaders need to move away from focusing on developing innovations and value within the classical solutions of the old industrial economy, with its firm- and product-centric view of value. In the global knowledge economy we have to increase the focus, through customer needs, on innovation and value creation (Priem, 2007). Enterprises need to focus on providing tailor-made products and services according to contemporary customers' needs (Johannessen and Olsen, 2010).

## 2. LITERATURE REVIEW

### 2.1 Value creation in the contemporary market context

To develop a value-creation strategy a firm must first identify what points of value their potential customers seek (O'Cass and Ngo, 2011). Value-creation strategies focus on the various dimensions along which customers perceive value. Ulaga (2003) identified eight dimensions of value creation in a business-to-business context: product quality, service support, delivery performance, supplier know-how, time-to-market, personal interaction, price, and process costs. Smith and Colgate (2007) proposed a customer-value creation framework that identifies four main types of value that can be created by organizations: a) Functional/instrumental value: the extent to which a product is useful and fulfills a customer's desired goals, b) Experiential/hedonic value: the extent to which a product creates appropriate experiences, feelings, and emotions for the customer, c) Symbolic/expressive value: the extent to which customers attach or associate psychological meaning to a product and d) Cost/sacrifice value: the cost or sacrifice that would be associated with the use of the product. O'Cass and Ngo (2011), assert that a firm's pre-emptive value-creation strategy is comprised of the product's attributes and the attributes' performance and to the fair price or the value price. The fair price refers to customers believing they are paying a fair price for a product or service; the value price refers to a price that justifies the benefits of purchasing a product. Under modern market conditions, customer engagement into value creation is acknowledged as a factor that makes it possible for companies to survive the competition (Banyte

and Dovaliene, 2014). Two streams of research exist within this research domain. One stream focuses on value from the managerial perspective (O'Cass and Ngo, 2011; Ngo and O'Cass, 2009; Sirmon et al., 2007), while the second stream focuses on value from the customers' perspective (Priem, 2007; Ulaga and Eggert, 2006; DeSarbo et al., 2001). However, value creation is a multi-stage process involving different users of value at different points in the process (Bowman and Ambrosini, 2000). Value creation offers several advantages including understanding customer needs, and continuous inter-organization cooperation resulting into competitive advantage (Chen, 2012; Ching et al., 2011; Vargo, 2004). According to O'Cass and Sok (2013), a firm's innovation capability has a positive effect on the firm's value offering, the value offering has a positive relationship with customer perceived value-in use (PVI), and PVI has a positive relationship with firm performance.

## **2.2 Green and smart innovations in furniture industry**

On the other hand, the global financial markets, public opinion, consumers but also the implementing policies at a global level, ask at a persistently way from the enterprises to improve their environmental performance. A common element, very significant for the enhancement of business competitiveness too, between classical entrepreneurial activity and environmental friendly economic activity, is innovation and the effective use of resources (Trigkas et al., 2012; Springett, 2003; Porter, 1990). The environmental innovation and strategy literature frequently encourage firms to make strategic commitments towards environmental protection activities as a means to increase also firm profitability and competitive advantage (Porter and van der Linde, 1995, Porter and Reinhardt, 2007 and Unruh and Ettenson, 2010). The recent introduction of the Green Innovation Value Chain (GIVC) concept highlights also the central role of customers' perceived value in the whole value chain (Olson, 2013). The number of companies interesting on environmental performance which address their environmental effort early in the supply chain is increasing (Frondel et al., 2007; Epstein and Roy, 2006). Focusing on the furniture industry, a study of Handfield et al. (1997), suggest that in order to be successful, environmental management strategies must be integrated into all stages of the value chain. While the potential for environmental performance improvement is evident, furniture enterprises demonstrate "pockets" of environmentally-friendly practices in different areas of their respective value chain functions. The propositions and results emerging from the research also suggests that environmental friendly products, must anticipate and pre-empt changing environmental regulations and customer expectations (Handfield et al., 1997). Regarding Greece, the investigation of the effect of green entrepreneurship to the furniture consumers has shown that the majority of the consumers confront more positively the firms that prove in deed their ecological perceptiveness (Trigkas et al., 2011). Furthermore, technological development and especially the fast development of information technology is one of the forces changing the value creation in products. Innovations in information technology continue to open up areas for new kinds of products. The realization and use of ICT creates challenges to managers regardless of whose perspective, buyer's or seller's, is adopted (Komulainen et al., 2004). Smart furniture constitutes the future evolution and tendency in furniture industry (Zongdeng and Wenjin, 2010; Tokuda et al., 2003). Thus, a smart furniture product has the capability to alter a conventional space into an intelligent spot that includes computing systems (Ito et al., 2003) under the context of a Ubiquitous Computing (Umpicomp) environment (Wuliji, 2009).

The aim of the present research is to propose a customer value co creation framework that apply to a context where one of the firm's resources is green and smart innovation in furniture products. The target group is people of the third age with special needs and value perceive attributes. Research is based to the process of new Green and Smart Furniture (GSF) product development. It is an ongoing project aiming to the development of intelligent and purely ecological furniture. The main idea is to improve the existing way of in-house activities and operation regarding the furniture, utilizing modern technologies not only for the manufacturing and material and final product traceability, but also at the furniture's use.

## **3. RESEARCH METHOD**

The research was based on two different market studies addressing both the furniture manufacturers and the consumers of the third age. Two different questionnaires were developed to serve as the basis for collecting data pertaining to the study's parameters. It should be noted that most questions reflect perceptions of the interviewed sample in order to outline the trends regarding GSF for the specific target groups and the perceived value of such a product, during its development from both of the stakeholders groups; firms and consumers. The items pertaining to each scale were pre-tested with 5 face-to-face interviews. The pre-testing process allowed the researchers to assess the content validity of items and ensure that interviewees understood the research instrument as they were intended. The research contains data from a random sample of 399 consumers from different regions of Greece during 2013 and from a random sample of 85 furniture manufacturers; 36 Greek

furniture enterprises, 25 Cypriot ones and 24 sectoral experts and relevant institutes in Greece and Cyprus. Before the launch of the study, a content validity test was conducted regarding the questionnaires. This test was based on discussions with furniture enterprises and specialized scientists in the furniture field along with the extended literature reviewing. The construct validity was based on the test of unidimensionality of the elements constituting each factor, as well as the content validity of each factor separately. We used Factor analysis according to the method of Principal Component Analysis. Regarding the content validity of the research variables, the statistical factor of Cronbach's Alpha was used (Sarigiannidis et al., 2009; Siomkos and Vasilikopoulou, 2005). Data were processed and statistically analyzed and all the related tests were made (Norusis, 2007; Howitt and Cramer, 2003).

## 4. RESULTS

### 4.1 Attributes shaping firms' value offering

In spite the severe economic crisis in Greece and Cyprus, the sampled firms admit that consumers in their majority are moderately or very little interested in ecological furniture or woodworking in general (54.0% and 60.9% respectively). A percentage of 18.9% and 17.3% respectively are conscious consumers of the above product categories and can constitute the ideal target groups. Bigger companies have customers who are more sensitive to ecological issues and, by way of consequence they are more interested in buying eco-furniture. An important question of the research referred to the intention of consumers to buy ecological furniture by paying an additional amount of money compared to conventional furniture. Cypriot entrepreneurs believe that their customers would be willing to pay an average of 11% more money in order to buy eco-furniture. Therefore, it seems that entrepreneurs and consumers' estimations converge regarding the added value of eco-furniture. On the contrary, Greek consumers seem reluctant to pay an additional amount of more than 9%. This results to a difference of 6% between suggested prices of suppliers and customers. Table 1 presents insights and speculations provided by the entrepreneurs regarding eco-furniture production or retail investments and relevant decision-making to eliminate risks regarding green marketing and certified sustainable wood promotion. Greek wood and furniture entrepreneurs' major concerns refer to the business risk and the size of uncertainty that the company encounters in case of choosing a green marketing strategy as well as the size of the new investment. These two factors were ranked first and second (4.29 and 4.11 respectively with 5 to be the most important). On the contrary, at the time of the research, Cypriot firms were more concerned on a) Prospective price, guarantees, potential discounts, and economic supplies of the products (3.76) and b) raw materials, trademarks, packaging, size, colors and product view in general (3.71).

**Table 1.** Concerns on production and launching of certified wood  
(importance rating from 5 to 1 with 5 to be the most important)

	Questions regarding certified wood	Importance	
		Greece	Cyprus
1	Business risk and size of uncertainty	4.29	3.50
2	Investment size	4.11	3.68
3	Prospective price, guarantees, potential discounts, economic supplies of the products	4.00	3.73
4	Questions on raw materials, trademarks, packaging, size, colors and product view in general	3.95	3.76
5	Best ways for fund sourcing: own funding, borrowing, leasing etc	3.84	3.71
6	What will be the variable cost and how will fix cost be charged? What about promotion and production costs?	3.68	3.68
7	What will be the process and the time needed to replace conventional wood with certified wood?	3.62	3.26
8	Do consumers, market conditions and competition allow for such changes?	3.45	3.22
9	Can existing production facilities, know-how etc support this new business concept?	3.45	3.23
10	Can existing resources (sales, channels, human capital etc) support this new business concept?	3.34	3.17
11	What is the optimum production quantity?	3.30	3.62
12	Which are the specific distribution channels and the relevant intermediaries' networks?	2.81	3.14

The reliability test (Cronbach's Alpha = 0.815) of the above concerns' importance and the relevant decision making indicates that the deterministic variables (responses) are concrete and reliable structures, capable to contribute to the measurement of the factor they belong to. Factor analysis after the factor matrix rotation showed three major factors: financial and investment factor (variables 10, 11, 9, 12, 4, 8 of Table 1), company resources according to the market demand (variables 2, 1, 3 of Table 1), marketing (variables 5, 6, 7 of Table 1). These 3 factors have quite high eigenvalues which reach the 63.2% of the total variation.

## 4.2 Attributes of consumers value proposition

A 54.4% of the consumers' target group admits that they are not willing to replace conventional furniture with green and smart ones unless it is cheaper (Figure 1). However, there are also three more criteria that seem to have a significant role in purchasing GSF: a) health condition (50.4%), b) assistance of GSF to everyday living (49.4%) and c) environmental protection along with the improvement of their everyday living conditions (49.1%). The analysis of the answers indicated characteristics and properties desired by GSF in regard to: a) environmental and natural resources protection, b) technology and its applications c) the specific needs and demands of end users and their surrounding space. Finally, the three most important factors that influence the participants' decision in purchasing GSF appear to be price, quality and functionality of the furniture as presented in Table 3. The rest of the factors follow, such as safety and ergonomics, environmental protection, technology and the design. The above mentioned factors of Table 3 are correlating each other and the correlation analysis using the Pearson correlation coefficient (Pcc) indicates that at a significance level of 0.01 the factors that affect positively each other in order for a consumer to buy GSF are the following:

- Quality in relation to a) raw materials used (Pcc = 0.606), b) functionality (Pcc = 0.469), c) ergonomics and safety (Pcc=0.412).
- Price in relation to a) quality (Pcc = 0.365) and b) functionality (Pcc = 0.229).
- Functionality in relation to a) safety and ergonomics (Pcc = 0.626) and b) raw materials used (Pcc = 0.560).
- Design in relation to a) technology (Pcc = 0.624) and b) ergonomics and safety (Pcc = 0.455).

Based on these findings, it is speculated that the added value for the GSF consumer is significantly related to economic factors, which is quite expected within the context of the severe Greek economic crisis. Qualitative characteristics and facilitation of everyday routine of users follow indicating that the main criteria regarding the decision of purchasing GSF are not substantially different of those for the conventional furniture. Nevertheless, firms will have to detect these specific elements that will allow them to achieve differentiation during production, including the incorporation of sophisticated technology and environmental protection in their products.

## 4.3 Customer-based value creation framework

Figure 1 illustrates the proposed customer value creation framework, based to the above analysis. Firm's value offering is organized into the categories of value creation that apply to a context where one of the firm's resources is green and smart innovation in launching a new product. Using the value offering, firms must create a customer value proposition that fulfills customer needs.

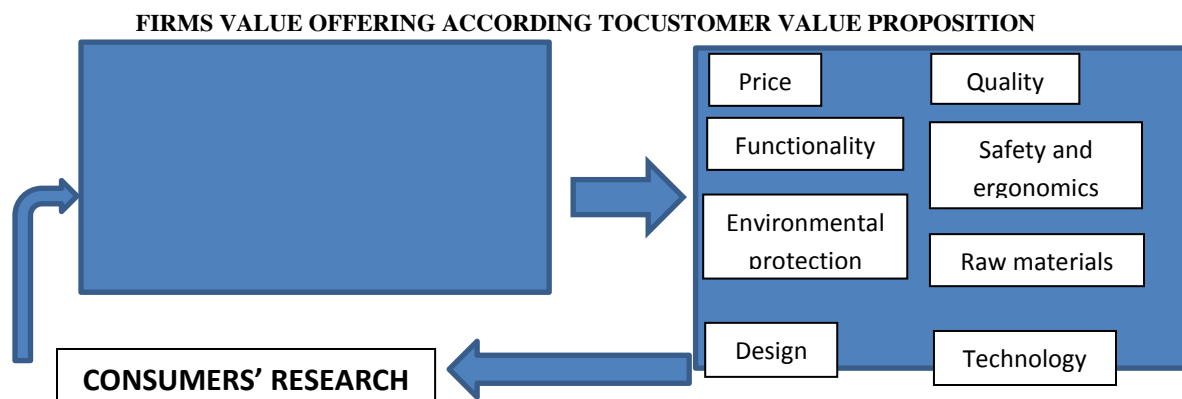


Figure 1: Proposed *Customer-based value* creation framework as developed within the GSF research project

According to the proposed framework, third age consumers' everyday living and its difficulties regarding the use of furniture, seem to play the most significant role, along with health improvement and environmental protection. Price also plays a crucial role. A GSF product, should be based to anthropocentric design, facilitating users' everyday living, including simple and friendly technology regarding health issues. Furthermore, contemporary consumers of the third age, seem to be quite aware on environmental issues, a fact that furniture enterprises should take under consideration regarding their strategy. GSF customers' value hierarchy identifies that customers perceive value not only from the attributes of a product itself but also from the consequences of

using a product. Thus, the average third age consumer, wishes a “multi-functional” furniture, which will also be able to reduce the costs of living, in an indirect way, satisfying as much needs as possible. The cost/sacrifice value identifies the customer’s perception of whether the value created is worth the cost paid. The commoditization of GSF products allows furniture manufacturers to provide differentiated products at a price point, that a great part of the third age consumers could afford, thereby increasing the customer perception of value added.

## 5. CONCLUSIONS

Concluding we can argue that, the basic criteria regarding the purchase of a GSF product are not fundamentally varying, in relation to the conventional furniture, a fact that constitutes rather a convenience for firms to orientate their value offering. Nevertheless, regarding their manufacturing strategy, firms should try to detect these differentiation attributes that could allow them to achieve their goals, including sophisticated technology and environmental protection along with affording prices, based to their customers’ needs. The functionality of a GSF product should take under consideration the facilitation of everyday living of users and their adjustment to anthropometric attributes based to age and security. These attributes are also closely related to the perceived value of quality for the people of the third age. GSF products customers’ value hierarchy identifies that, customers perceive value not only from the attributes of a product itself but also from the consequences of using a product and the goals achieved by it. We can argue that, GSF customer value perception could be defined as a customer’s evaluation of what they get in return for what they give. Firms must create a customer value proposition that fulfills customer needs. From their point of view, this proposition lies to three major factors: financial and investment factor, company resources according to the market demand and marketing. Thus, furniture manufacturers could base their strategy and business planning to the proposed value creation framework, in order to improve their competitiveness.

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### References

- Banyte, J. and Dovaliene, A. (2014) ‘Relations between customer engagement into value creation and customer loyalty’, *Procedia - Social and Behavioral Sciences*, vol. 156, pp.484 – 489.
- Bowman, C and Ambrosini, V. (2000) ‘Value creation versus value capture: Towards a coherent definition of value in strategy’, *British Journal of Management*, vol. 11, no. 1, pp. 1–15.
- Chen, J. (2012) ‘The Impact of Value Co-creation Capability on Cooperation Performance in Service Supply Chain with Trust as Mediator’, *Fifth International Conference on Business Intelligence and Financial Engineering*, Beijing, China.
- Ching, R., Hui, A. and Chen, J. (2011) ‘The Study of Service Co-creation’, *International Joint Conference on Service Sciences*.
- DeSarbo, W.S., Jedidi, K., and Sinha, I. (2001) ‘Customer value analysis in a heterogeneous market,’ *Strategic Management Journal*, vol.22, no. 9, pp. 845–857.
- Epstein, J. and Roy, J. (2006) ‘Implementing a corporate environmental strategy: establishing coordination and control within multinational companies’, *Business Strategy and the Environment*, vol. 16, pp. 389–403.
- Frondel, M., Horbach, J. and Rennings, K. (2007) ‘End-of-pipe or cleaner production? An empirical comparison of environmental innovation decisions across OECD countries’, *Business Strategy and the Environment*, vol. 16, pp. 571–584.
- Handfield, R., Waltonb, S., Seeger, L. and Melnyka, S. (1997) ‘Green’ value chain practices in the furniture industry,’ *Journal of Operations Management*, vol. 15, no 4, pp. 293–315.
- Howitt, D. and Cramer, D. (2003) ‘*Statistics with SPSS 11 for WINDOWS*’, Kleidarithmos Eds, Athens.
- Ito M., Iwaya A., Saito M., Nakanishi K., Matsumiya K., Nakazawa J., Nishio N., Takashio K. and Tokuda H. (2003) ‘Smart furniture: improvising ubiquitous hot-spot environment’, *Int. Conf. on Distributed Computing Systems*, pp. 248-253.
- Johannessen, J-A. and Olsen, B. (2010) ‘The future of value creation and innovations: Aspects of a theory of value creation and innovation in a global knowledge economy’, *International Journal of Information Management*, vol.30, pp. 502–511.
- Komulainen, H., Mainela, T., Tähtinen, J. and Ulkuniemi, P. (2004) ‘Exploring Customer Perceived Value in a Technology Intensive Service Innovation’ *20th IMP Conference*, Copenhagen, Denmark.

- Ngo, L., and O'Cass, A. (2009) 'Creating value offerings via operant resource-based capabilities', *Industrial Marketing Management*, vol.38, no. 1, pp. 45–59.
- O'Cass, A. and Ngo, L. (2011) 'Examining the Firm's Value Creation Process: A Managerial Perspective of the Firm's Value Offering Strategy and Performance', *British Journal of Management*, vol. 22, no. 4, pp. 646–671.
- Norusis, M. (2007) *A guide of data analysis with SPSS 12.0*, KleidarithmosEds, Athens.
- O'Cass, A and Sok, P. (2013) 'Exploring innovation driven value creation in B2B service firms: The roles of the manager, employees, and customers in value creation', *Journal of Business Research*, vol. 66, no. 8, pp.1074–1084.
- Olson, E. (2013) 'Perspective: the green innovation value chain: a tool for evaluating the diffusion prospects of green products', *Journal of Product Innovation Management*, vol.30, no. 4, pp. 782–793.
- Porter, M. (1990) 'The competitive advantage of nations', *Harvard Business Review*, vol. 68, no. 2, pp. 73–93.
- Porter, M. and Reinhardt, F. (2007) 'A strategic approach to climate', *Harvard Business Review*, vol. 85, pp. 22–26.
- Porter, M. and van der Linde, C. (1995) 'Green and competitive', *Harvard Business Review*, vol.73, pp. 120–134.
- Priem, L. (2007) 'A consumer perspective on value creation,' *Academy of Management Review*, vol.32, no. 1, pp. 219–235.
- Siomkos, I. and Vasilikopoulou, I. (2005), 'Implementation of Analysis Methods in the Market Research, Stamoulis Publications, Athens.
- Sirmon, D. and Hitt, D. (2007) 'Ireland Managing firm resources in dynamic environments to create value: Looking inside the black box', *Academy of Management Review*, vol.32, no. 1, pp. 273–292.
- Smith, B. and Colgate, M. (2007) 'Customer Value Creation: A Practical Framework', *Journal of Marketing Theory & Practice*, vol. 15, no. 1, pp. 7 – 23.
- Springett, D. (2003) 'Business conceptions of sustainable development: a perspective from criticaltheory', *Journal of Business Strategy and the Environment*, vol. 12, no. 2, pp. 71-86.
- Tokuda, Y., Iwasaki, S., Sato, Y., Nakanishi, Y. and Koike, H. (2003) 'Ubiquitous Display for DynamicallyChanging Environments', *Conference on Human Factors in Computing Systems archive, CHI '03 extended abstracts on Human factors in computing systems*, pp. 976 – 977.
- Trigkas, M., Papadopoulos, I. and Karagouni, G. (2012) 'Economic efficiency of wood and furniture innovation system', *European Journal of Innovation Management*, vol. 15, no.2, pp. 150 – 176.
- Trigkas, M., Papadopoulos, I. and Karagouni, G. (2012) 'Implementation Characteristics of Green Entrepreneurship in the Greek Furniture Sector', *Proceedings of the 7th European Conference on Innovation and Entrepreneurship, Santarem Portugal*, pp.680 – 688.
- Trigkas M., Papadopoulos, I., Tassiopoulou, K. and Porikos, N. (2011) 'Green entrepreneurship in Greek furniture Enterprises', *Proceedings Management of International Business and Economics System 2011 International Conference, Serres, Greece*, pp. 232 – 249.
- Uлага, W. (2003), 'Capturing value creation in business relationships: A customer perspective', *Industrial Marketing Management*, vol.32, pp.677– 693.
- Uлага, W. and Eggert, A. (2006) 'Value-based differentiation in business relationships: Gaining and sustaining key supplier status', *Journal of Marketing*, vol.70, no. 1, pp. 119–136.
- Unruh, G. and Ettenson, R. (2010) 'Growing green', *Harvard Business Review*, vol. 88, pp. 94–100.
- Vargo, S. and Lusch. R. (2004) 'Evolving to a New Dominant Logic for Marketing', *Journal of Marketing*, vol. 68, pp. 1-17.
- Vargo, S., Maglio, P. and Akaka, M. (2008) 'On value and value co-creation: A service systems and service logic perspective', *European Management Journal*, vol. 26, pp. 145-152.
- Xie, C., Bagozzi, P. and Troye, V. (2008) 'Trying to prosume: Toward a theory of consumers as co-creators of value', *Journal of the Academy of Marketing Science*, vol.36, pp.109–122.
- Wuliji, D. (2009) 'Creative design of intelligent children furniture', *IEEE 10th Int. Conf. on Computer- Aided Industrial Design & Conceptual Design*, pp. 1345-1348.
- Zongdeng Z. and Wenjin, L. (2010) 'The Innovative Design Method of Intelligent Furniture Intelligent System Design and Engineering Application', *International Conference on ISDEA*, vol. 2, pp. 673-677.