

# Inspired by design and driven by innovation. A conceptual model for radical design driven as a sustainable business model for Malaysian furniture design

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**Abstract.** The definition of innovation does not help the entrepreneurs, business person or innovator to truly grasp what it means to innovate, hence we hear that government has spend millions of ringgit on "innovation" by doing R & D. However, the result has no avail in terms of commercial value. Innovation can be defined as the exploitation of commercialization of an idea or invention to create economic or social value. Most Entrepreneurs and business managers, regard innovation as creating economic value, while forgetting that innovation also create value for society or the environment. The ultimate goal as Entrepreneur, inventor or researcher is to exploit innovation to create value. As changes happen in society and economy, organizations and enterprises have to keep up and this requires innovation. This conceptual paper is to study the radical design driven innovation in the Malaysian furniture industry as a business model which the overall aim of the study is to examine the radical design driven innovation in Malaysia and how it compares with findings from Western studies. This paper will familiarize readers with the innovation and describe the radical design driven perspective that is adopted in its conceptual framework and design process.

## 1. Introduction

Europe is well known with the "Italian style" luxury furniture and Indonesiawith its teak furniture and internationally-acclaimed German designer *Klaus Kummer* reveals that there is a lack of Malaysian identity in Malaysian furniture as the furniture industry prefers to look to the West for furniture inspiration. This notion is consistent where Malaysian furniture are in lesser originality due to the commonality of manufacturers to copy other existing product designs [1].

Most firms design for the West which does not reflect the culture of their own. Statement made by Chief Executive Officer, Malaysian Furniture Promotion Council also confirmed that according to experts' perceptions "Malaysian furniture industry needs a clear vision, strategy, and direction, to upgrade its design capabilities urgently and to be better organized and coordinated [2]. Malaysia has lacked of design expertise, R&D and brand identity as compared to Italy and Thailand. Therefore, such a phenomenon has created a concern of whether the current manufacturers have been equipped with the right innovation. Although there have been a few studies on design innovation in Malaysia, there is less focus on radical design innovation and the radical design innovation literature is mainly based on data from Western samples from Western developed country. Little is known about



the radical design innovation in East Asia countries [3,4,5]. This raises the question of whether radical design innovation can be generalized to other cultures.

There are still questions raised as to how well Western findings could be generalized to other societies with a dissimilar culture. This is an important question to be addressed so that radical design innovation policies could be developed to suit the Eastern context. Thus, this study address this gap in the radical design innovation literature. In Italy, numerous studies revealed that the theory of Radical Design Driven Innovation is proven to drive markets along with significant profit margins and brand value. The Italians' approach is more on a knowledge research process aiming to develop new meanings and languages [6]. They are very much dependent on Design Driven Laboratories (DDL) where this phase is carried out within organizations and active cooperation by the designers in order to gain influence on customers to perceive the projected product. Design fairs in Italy function as a market test to gain feedback from visitors on developed prototypes [7]. Excellent examples of radical design driven innovation that prove meanings are *Nintendo*, *Apple*, *Artemide*, *Whole Foods Markets* and *Alessi*.

Therefore, in order for Malaysia to compete with Italy in furniture design, Malaysia needs to have a robust framework as a unique design innovation strategy. This innovation often look against the dominant aesthetic standards and the process involves a tacit, invisible-no-method, no tools, no steps and mainly based on networks on uncoded interaction among agents of innovation [8]. However, questions the usefulness of radical design driven innovation as excellent systems applied by the Italian companies as it will only to be applied on firms that has a stable and diffuse technological competencies [9]. Not only that, he discussed that the adoption of design driven innovation is beneficial to firms that are already reputable in the market and credible along with strong complementary assets. Additionally, Tether (2005) also added that firms that are applying this type of innovation are only suitable for young unknown designer to channel through established and credible firms for a better adaption to this innovation. Therefore, it is important to re-evaluate and complement the theory to cater the emotion, cultural and social needs of users.

## **2. Purpose of Inquiry and Inquiry Questions**

This conceptual paper is intended to identify and understand the radical design driven innovation in Malaysia and how it compares with findings from Western studies. Thus, this research aims to highlight the radical design driven innovation in the Malaysian furniture industry as a business model. Therefore, the inquiry questions that arise for this paper are:

- I. Innovation Approach in New Product Development Process that had been widely accepted and practiced in current product development processes. How far do the furniture manufacturers in Malaysia practice this approach?
- II. What are the factors that could be identified in relation to propose the Radical Design Innovation Framework?
- III. How can Radical Design Innovation Framework be enhanced to align with the Malaysia context?

## **3. Significance of Study**

This conceptual paper is significant because it will provide valuable information in understanding and formulating ways to enrich the radical design innovation and is much in relevance to the Government policy. It benefits the furniture industry further as Malaysia Design Council (MRM) spearheads design programmes to pave a future of innovation and design for Malaysia. Theoretically, the results are intended to fill the gaps. It is an attempt to investigate the influence of radical design innovation on their competitiveness in the Malaysian furniture industry. This paper will also provide new insights about how radical design innovation is understood in an Eastern developing country, and to understand to what extent Western findings can be generalized to an Eastern context and make recommendations for future research.

#### 4. Delimitations and Limitations

This conceptual paper is delimited by several elements. First, this paper only reviews design driven innovation. This is delimiting because it excludes other innovation strategies was in place and other innovation strategies were being implemented as Design Driven innovation was found successful strategies in business model. Second, the theoretical framework uses ; the design approach that embraces design, innovation and strategy and the business modeling approach that embraces strategy, business model and innovation. This is delimiting because when understanding innovation, one must go into other subjects such as strategy, politics, and economics of a company which in this study the companies that will be selected are those who won the Malaysia Pride award.

#### 5. Literature Review

##### 5.1. *Defining Design and the Changing Notion of Design*

Serious attention towards design being worthy of in-depth, scientific investigation was triggered in the early 1960s by two conferences, one held in London in 1962 and one held in Birmingham in 1965 [10], both of which raised interesting debates on the need to develop a science of design. Design was a much broader field, which encompassed any type of planning “aimed at changing existing situations into preferred ones” (Simon, 1969). [12] provides the following sentence: “Design is when designers design a design to produce a design”. While [13], defined design is conceived as part of a problem-solving activity beginning with the perception of a gap in a user experience, leading to a plan for a new artifact, and resulting in the production of that artifact. The artifact can be any result of intentional creation, including physical goods, software, and services. By starting with a reflection on the semantics of the term ‘design’, [14] suggests that its etymology goes back to the Latin ‘de + signare’ and refers to “making something, distinguishing it by a sign, giving it significance, designating its relation to other things, owners, users or goods” (2003:157). Moreover, ‘design’ can be a noun or a verb, that is, “a product which has been made by humans may be referred to as ‘a design’, while the activity that produced this product is the act of ‘designing’ [15].

According to systems designer and educator [16], design has “different meanings in different domains, [is] used in different ways by researchers in the same domain, and [is] found in the literature referring to concepts at different levels of abstraction” (p. 347). Many others in a wide range of disciplines have noted there are a multitude of definitions of design as two mentioned above [17,18,19,20]. However, It is widely recognized that design is an important factor contributing to firms’ success because of its potential to boost their competitiveness [21,22]. Design is closely associated with success in NPD performance. Regardless of the type of strategy pursued, design has a statistically significant and substantial association with new product development performance [23].

An integration of brand strategy and design innovation will tend to perform superior market dominance [24]. However, national efforts are given focus in promoting design culture in the Malaysian furniture industry through the formulation of Furniture & Wood Design Roadmap (FWDR) 2012-2020. It is carried out to create a portfolio of new exciting designs that have international market appeal that can be manufactured and marketed by Malaysian furniture manufacturers who have strong product branding/identity reinforce the nation’s furniture industry image. This will place ourselves as one of the countries recognized for good design (green and sustainable designs) [25]. The search for a Malaysian identity is a retrospective effort in innovation and it is possible to turn to the traditional arts and culture as a source of reference [26]. This is carried out by coming up with designs that have elements of Malaysian culture to be sold all over the world. Ultimately, firms should be able to create different designs that will appropriately fit to numerous markets around the world. Asian designs would be respected by the world over through that status [27].

However, [28] stated that functionality gives lack of fulfillment to users and are more concern on products that have the language of emotion (imagination, myths and ritual) which effect their decisions in buying a certain product. Copying other designs for the European market is not sufficient to define ‘design’ in the context of the Malaysian furniture industry.

## 5.2. *Innovation Concepts and Typology*

According to [29] in their analysis of concepts, aspects, definitions and types of innovation, they concluded that; the challenge will be to refine the innovation definition and classification of innovation types and streamline them into a usable and understandable set of definitions, concepts and types which are of use for academics and practitioners. For private sector practitioners this is of utmost importance since it shows that too many different concepts appeared in the last years which are more of marketing and advertising style rather than adding real value to company operations. In the political sphere such understanding should emphasize the potential impacts of innovation for the given political and societal goals but these needs to be a clear communication beyond the respective communities involved. Overall innovation needs to be considered as a long time investment. There is still the assumption that actors (companies or countries) investing in innovation are the most successful ones but in reality the time dimension of impact from innovation is neglected.

Innovation is important for business as it creates economic value, the return on investment spent on the invention and it is about competing effectively in the market. Value creation is the *raison d'être* of innovation. Hence innovation impacts on enterprises whom making money while doing something good for the environment and for society. [30] also emphasized that for most Entrepreneurs and business managers, are creating "Enterprise Value" which innovation is about creating something of economic value that increases revenue, reduces cost, improves the customer experience, makes a profit and thereby increases shareholder value. Therefore, if there is no "Enterprise Value", then there is no innovation and it is merely invention which add no value to the organization.

**5.2.1. *Strategies of Innovation.*** A new product development is a process of generation and integration of knowledge and it can be identified by two principal sources of knowledge: the knowledge about technology and the availability of new technologies solutions and the knowledge about customers' needs. [8] identifies it as the Market pull strategy referred to design is called user-centered design. User-centered design approach states that product development should start from a deep analysis of user needs. A company can successfully innovate by asking users about their needs or by observing them as they use existing products and by tracking their behavior in consumption processes. In the market-pull approach the market and the consumer play a central role.

The technology-push approach argues that the source of innovation comes from the research and development activities of the company and the identification and development of new technologies based on the previous research work. The technology-push approach is based on the company and the development of new technologies that subsequently drives the innovation process.

The design driven innovation approach, the semantic dimension that guides the innovation process plays a more important role rather than the market or the technology. According to that, a third source of knowledge has to be added to the knowledge about user needs and the one about technological opportunities, such as "*the knowledge about the signs that can be used to deliver a message to the user and about the socio-cultural context in which the user will give meaning to those signs*" [14]. In a design-driven strategy the crucial aspect of innovation concerns the capability to understand, anticipate and influence the emergence of new product meanings. Verganti defines the radical design driven innovation as "*an innovation where novelty of message and design language is significant and prevalent compared to novelty of functionality and technology*".

**5.3 *Theory of Radical Design-Driven Innovation.*** This innovation is led by Robert Verganti from Politecnico De Milano in Italy whom is the apostle of radical innovation of meaning. This is supported by [31] that socially recognized notions of identity as true products and become tokens of the symbolic exchange of meaning. This radical innovation focuses on exploring new market potential and boost brand image. Correspondingly, introduced a new interpretation of "Function versus Form" where product gives functionality and 'form' as giving new meanings for customers in terms of emotional and socio-cultural needs. This strategy aims at radically change the emotional and symbolic content of

products (i.e their meanings and languages), through a deep understanding of broader changes in society, culture and technology. Rather than being pulled by user requirement, design driven innovation is pushed by a firm's vision about possible new product meanings and languages could diffuse in society. In this case, semantic is given more paramount importance in products rather than aesthetics.

#### *5.4 Summary of Theoretical Framework*

This conceptual paper integrates design innovation approach and business modeling approach which make it necessary to give a theoretical framework on the relevance of Radical Design Innovation. The model is appropriate for this inquiry because it allows the reader to understand how Radical Design Innovation is formed.

#### *5.5 Overview of the Conceptual Framework*

To address the main issues of the present work, different and various literature streams (studies on innovation, on design, on strategy and on business models) have been leveraged. What is interesting are the links between these different approaches. Two main “approaches” can be recognized:

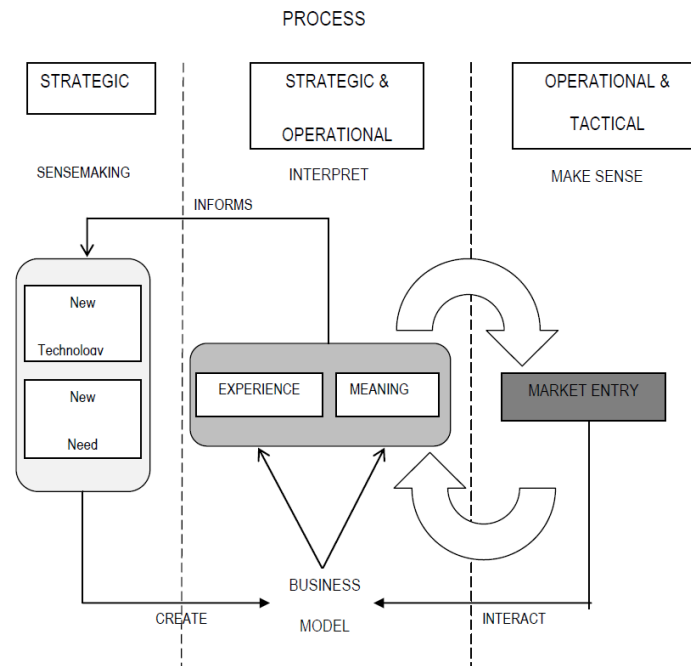
- (1) The design approach that embraces design, innovation and strategy.
- (2) The business modeling approach that embraces strategy, business model and innovation.

The first approach was developed by [32]. The framework comprises of two components; which are Strategic Design Subsystem and Operational Subsystem. Strategic Design is described as identifying the recent trend in both the latest technology and lifestyle which leads to an intensive design discourse. This is followed by interpreting these sensing outcomes by finalizing the most suitable idea which aligns with vision of the company. Finally, the chosen idea will be addressed as a high level concept that consists of its main elements which are Product Vision, Design Statement, Future / Anticipated Socio-Cultural Context.

The second subsystem is Operational Subsystem, which comprises of developing the new product (NPD) that includes Technology Searching/Development, Product Language Design and Product Development. The second element is Communication, where they crucially design the ultimate strategy to communicate the new value embedded in the product to attract future customers.

The second approach was inspired from the product semantic framework of [33]. It shows a circular process of meaningful relations between strategists (entrepreneur and managers), business model and customers-stakeholders. Since “people understand the world through bracketing and chunking experience into meaningful units”, the company’s business model is seen as the experience of customers and stakeholders and meaning always refers to the business model perceived in its enacted context. In this sense, paraphrasing the Krippendorff “form follows meaning”, we may affirm that experience follows meaning. The business model’s meaning strategy becomes a mediating construct between technology and economic value [34] through its semantic value. To accomplish this task, a creative process is required based on experiences and the creation of meanings, due to a fluid intelligence able in imagining new languages possibilities [35] and proposed as in Figure 1;





**Figure 1.** Conceptual framework of Radical Design Driven Innovation.

## 6. Conclusions

Business models constitute, in such a perspective, frames that managers and firms develop to organize not only “the way they make money” but also the way they convey meanings, beliefs, values and organizational culture. The sense making and making sense processes for meanings creation are traits of union concepts between the design approach and the business modeling approach. It is therefore possible to extend the design-driven innovation approach [33,8] to strategic business modeling and propose the concept of Meaning Strategy as a strategy aiming to make sense of an enterprise business model. The meaning strategy is a strategy that shapes the business model with the aim to convey a precise meaning. It is possible to act conveying new meanings in old building blocks or building new building blocks in order to convey an old or a new meaning. Therefore, in order to answer the research questions in this study the two approaches of; the design approach that embraces design, innovation and strategy and the business modeling approach that embraces strategy, business model and innovation will be abducted.

## References

- [1] Valipoor, S, & Ujang, B (2011). Challenges of Sustainable Design in Malaysian Furniture Industry. 2011 International Conference on Environment and Industrial Innovation (IPCBEI 2011), vol.12.
- [2] Au Leck Chai (2012) New Quality To Mark Malaysian Furniture –Malaysia Pride: Seminar On Sabah Furniture Industry –A Potential Hub for Outdoor Furniture . Kota Kinabalu, Sabah.
- [3] Academy of Sciences (2015). *Furniture Industry Sector*. (Academy of Sciences Report). Mega Science 3.0.
- [4] Ratnasingam, J., Ramasamy, G., Ioras, F., Kaner, J., and Wenming, L. (2012). Production potential of rubberwood in Malaysia: Its economic challenges, Not Bot Horti Agrobo 40(2), 317-322.
- [5] Abdullah, I. H. I. (2012). Malaysia Design Industry. (M. R. Malaysia, Ed.) Design Seminar and Workshop: *Malaysia-Korea Design Sharing: Design As A Strategic Tool for Innovation*. Seri Pacific Hotel, Kuala Lumpur, Malaysia.

- [6] Dell'Era, C., Marchesi, A., & Verganti, R. (2010). Mastering Technologies in Design-Driven Innovation. *Research Technology Institute*, 53(2), 12–23.
- [7] Dell'Era, C. and Verganti, R. (2009), Design-driven laboratories: organization and strategy of laboratories specialized in the development of radical design-driven innovations. *R&D Management*, 39: 1–20. doi:10.1111/j.1467-9310.2008.00541.x.
- [8] Verganti, R. (2008). Design, Meanings, And Radical Innovation: A meta model And A Research Agenda. *Journal of Product Innovation Management*, 25(5), 436–456. doi: 10.1111/j.1540-5885.2008.00313.x
- [9] Tether, B. S. (2005) 'Do Services Innovate (Differently)?': Insights from the European Innobarometer Survey', *Industry and Innovation*, 12.2, pp. 153–184.
- [10] Maffei, S., (2010). The project is a clinical practice. The perspective of design. In: Fabbri, T.M. (Ed.), *Organize: Concepts and Methods*. Carocci, Rome, pp. 265
- [11] Simon, H.A., 1969. *The Sciences of the Artificial*. MIT Press, London.
- [12] John Heskett (2001) Heskett, J.(2001). Past, Present, and Future in Design for Industry. *Design Issues*, 17(1), 18–26.
- [13] Ulrich, K. T. (2011), Design Is Everything? *Journal of Product Innovation Management*, 28: 394–398. doi:10.1111/j.1540-5885.2011.00809.x
- [14] Verganti, R. (2003), Design as brokering of languages: Innovation strategies in Italian firms. *Design Management Journal* 14: 34–42. doi:10.1111/j.1948-7169.2003.tb00050.x
- [15] Beltagui, A., Riedel, J., Livesey, F., Demian, P., Moultrie, J.(2008). Briefing note 1: What is design? *A review of definitions. Design Scoreboard - A novel approach to measuring the UK's National Design Performance*. 1–19.
- [16] Love, T. (2002). Constructing a coherent body of theory about designing and designs: some philosophical issues. *Design Studies*, 23(3), 345–361.
- [17] Bamford, G. (1990). Design, science, and conceptual analysis. In: *Architectural Science and Design in Harmony* (pp. 229–238). Joint ANZAScA/ADTRA Conference, Sydney, July 10–12, 1990.
- [18] Galle, P. (2008). Candidate world views for design theory. *Design Studies*, 29(3), 267–303
- [19] Poggenpohl, S., Chayutahakij, P., & Jeamsinkul, C. (2004). Language definition and its role in developing a design discourse. *Design Studies*, 25(6), 579–605.
- [20] Ralph & Wand, 2009). P. Ralph, & Y. Wand. (2009). A Proposal for a Formal Definition of the Design Concept. *Design Requirements Engineering: A Ten-Year Perspective*, 14, 103–136.
- [21] Hertenstein, J.H., Platt, M.B., Veryzer, R.W. (2013). What is 'good design'? An investigation of the complexity and structure of design. *Des. Manag. J.* 8, 8
- [22] Roy, R., Riedel, J.C., (1997). Design and innovation in successful product competition. *Technovation* 17, 537.
- [23] Roper, S., Love, J.H. and Vahter, P. (2012). The value of design strategies for new product development: Some econometric evidence. ISSN 0964-9328 – CSME Working Papers
- [24] Tamyez, P.F, Nor, N.M., & Nasir, S. J.A (2014). *The Effects of Brand Orientation, Brand Distinctiveness and Design Innovation on the Brand Performance of the Malaysian Furniture Manufacturing Firms*. 1st AAGBS International Conference on Business Management 2014 (AiCoBM 2014), Penang, Malaysia, 6–8 April 2014.
- [25] Hajah Robiyah Hj. Husin (2012) Furniture Industry In Malaysia - Status & Market Prospects. Seminar on Sabah Furniture Industry – A Potential Hub for Outdoor Furniture By: Malaysian Timber Industry Board . Kota Kinabalu, Sabah.
- [26] Bajuri, M. T. bin. (1997). Industrial Design Scenario in Malaysia. *International Council Society of Industrial Designers Conference*. Toronto, Canada.
- [27] Bajuri, M. T. bin. (2002). Speech of 2002 Malaysia Good Design Mark. Kuala Lumpur: Majlis Rekabentuk Malaysia (MRM).
- [28] Jensen, R. (1999). *The Dream Society: How the coming shift from information to imagination will transform your business* (New York: McGraw-Hill).

- [29] Kotsemir, M., & Abroskin, A. (2013). Innovation Concepts And Typology – An Evolutionary Discussion . Working Papers. Series: Science, Technology And Innovation Wp Brp 05/Sti/2013
- [30] Vivekarajah, S (2013). *Blue Sky Innovation: Killer innovations that changed the world of business*..First Enterprise Kuala Lumpur, Malaysia. ISBN 978-967-11767-1-9
- [31] Margolin, V., & Buchanan, R. (1996). The Idea of Design. Cambridge, Mass: The MIT Press.
- [32] Kembaren, P., Simatupang, TM., Larso, D., & Wiyancoko, D (2014). Design Driven Innovation Practices in Design-preneur led Creative Industry. ***Journal of Technology Management & Innovation***, 9 (3) .
- [33] Krippendorff, K., (1989). On the essential contexts of artifacts or on the proposition that “design is making sense (of things)”. Des. Issues (5), 9
- [34] Chesbrough, H. and Rosenbloom, R.S. (2002). ‘The role of the business model in capturing value from innovation: Evidence from Xerox Corporation’s technology spin-off companies’, *Industrial and Corporate Change*, 11(3), 529- 555.
- [35] Rullani, E. (2004) . The Economy of Knowledge. Creativity and Value in Network Capitalism. Rome: Carocci