The integration System Innovation Adaption in Business Complexity - Empirical evidence from Romanian

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Abstract
This paper examines the stabilizing Business complexity using innovation and integration as an attribute for business organizations in Romania. Going with the assumption that business environment can be considered an adaptive complex system. Business complexity refers to daily business cycle efficiency of operations with effect on costs, the paper try also to identify the role of innovation attribute found in integration process, the paper apply the Water Fall Model which is an approach in modeling based on interfaces, which can help in identifying integration points respecting the basic design model standards. The paper findings contributes on draw an interest image to the influence of Business modeling combined with innovation integration to keep performance and find flexibility to maintain market segmentation, the paper also will focus on innovation environment and innovation strategic management adaptation in the business network, measuring risk as a segment using model complexity rating.

Keywords
Romania, Efficiency, Adaption, Business Complexity, Systems Integration, Innovation Business

JEL Classification
O29, O30, O38, P17

Introduction
Economists and business analysts tries to interpret ate s sudden cooperation failure and losing customer preference, several questions raises did the lack of R&D resources, or maybe lacked of skilled managers on that moment or failed to track their markets changes or maybe, just missed the moment when they should develop and rethink their current business model to a next technology. History shows us almost all will known brands have severely lost market share for new arrivals in the business, missing out radical innovation and leaving them self under market self control, being busy in managing daily business and serving current clients instead of indentifying future opportunities. No doubt that dependence on innovation products and customer service in today’s business have reached very high levels. (Saebi and Foss 2015) helping certain young to evolve rapidly and get high market share, these brands mixed innovative products with special customer care to
form customer value to their product or service enhancing the reduce of costs and minimize the complexity effect creating a new level of competitive advantage for a new age of business. For insistence Apple Inc new leading market brand in phones market succeeded to create a high perceived customer value with its innovative phones with a remarkable new model to sustain its position in the market. Others reduce Complexity and working capital through build-to-order-processes (Vargas,2015). Business start small and grow wide , a competitor appears with same product or service better features lower costs and better distribution chain , the case of Nokia, Blackberry versus Apple and Samsung , we find that these brands become the market leaders in time making Nokia and Blackberry losing ground to them after and then disappear. (Souto, 2015) Many scientific studies in the last decade discuss the life cycle of a business, in 1955 the 500 business large companies have been reduced today to 11%, while 89%from the1955 list were completely out of life and influence, the average age companies in this list were 75 years then, but today in a rapid changing world, the average become 15 years old, this average can show competition including innovation with minimizing complexity, making new products, and new customer communities. (Hu2014) A question raises is it possible to apply the same model approach to other business, can business age and eventually die, start strong grow then week , age and die (Hittmár ,2014)like its managers and employees and retracts its importance, become with a low impact in the market, get out of competition. (Serrano-Santoyo,2013). But still 11 percent of companies that have survived in the 1955 list, and try to in solve its ability to stay in competition and renew its potential. Studies tell us that the 11 companies left from the 500 largest global company in a 40 years transformed its all visual assets from total assets with 80 percent to invisible such as research studies and inventions which .If Business wants to remain in the global competition circle and not age, must also follow the example of these 55 companies.

1. The Importance of applying integration and Innovation in Business Models:

Usually when managers, entrepreneurs, analysts or developers use the innovation concept people start to link it technology developments or new products and services, or can be linked directly to new processes of computer systems, software’s that have the potential in some cases to reconstruct production systems and boost business performance and make changes to whole business model to in an organizations. (Boons, and Lüdeke-Freund, 2013). But reality shows that Innovation concept goes beyond just classic technological evolution. Innovations are integrated methods used to change and improve organization performance and achieve success to improve economic results, so the notion of innovation is much wider than the concept of technological or new products modifications concept. (Kevin,2012) There are several types of innovations as illustrated in figure Nr.1 which give us the conclusion that innovation cover wider types and possibilities to study adopting and apply process of integration to gain performance in management, the integration can be interpret on new concepts and practices in which gives the organization a comprehensive framework, ability to make positive changes and improve results in which lead to effectiveness and performance. (Doganova,2009) Innovation is the key to survival in conditions of dynamic changing environments and integration is the core attribution of new innovative model of business or production and services in such changing environments (Dhewanto, Prasetioan, Ratnaningtyas, and Group,2012). The BOBZURUB 2015 Model Figure number 2 is an approach to bring complexity to the table and show how business organizations confront with Macro and micro economic complexity forming several level of complexity in the process of gaining for every product produced in Romanian business environment and propose a adaptable changes for N of products to reach N markets.
Fig. no. 1: Types of innovation within business organization and integration as innovation attribute

New Model
New Product or Service
New Reorganizing
New Administrative Practices
New Marketing Methods
New External Relations

Fig. no. 2: BOBZURUB 2015 Model, Minimizing Business complexity in context of Macro-Micro economic Complex environment
The BOBZURUB model shows the interactions between capital, materials and operations melting together forming processes needed to produce outputs products to reach markets. A complex phenomena to be consider, the model show that interaction of the macro and micro complexity classification types form the different levels of complex environment Low Medium and high to produce N types of products, the model also sets several solutions for every product a part to reduce and stabilize complexity level to every product till reach its market. The role of water fall model can be here considered a way to reform or reproduce process to adapt and work on the stabilization of complexity for every line of production. BOBZURUB model bring material and capital efficiency consummation in a scope to put the organization on track to maintain competitive position on its principal product markets. The most important and most useful result of business complexity study in business organizations, are the founding’s innovations attributes at administrative levels as a responded to levels of complexity. It creates a new ways of systematic thinking problem-solving and decision-making leading to development strategies creating a healthy survival, adaptable to change in environment resulting continuous business scaling. (Wonglimpiyarat, 2005).

2. Problems and Methodology

Proving the BOBZURUB model in stabilize and minimize the business complexity environment of production lines process for a Romanian Business organization in our case Namira business Production Srl, a leader in Oil and Gas and Petrochemical fasteners also confirm that integration is an original attribute of innovation in modeling, and in the same time innovation is an attribute of a complex adaptive system, it leads us that business problems can be solved by complexity theory within non-linear thinking using equations and methods applied to rules from parallel sciences, and based on the theory all complex adaptive systems have the same hierarchy shape no matter the scientific filed Economic, Eco System, Geology, Quantum physiques. Here the role of the waterfall development model can be away to prove the validation of BOBZURUB model for stabilizing the complexity environment the water fall model is used for design or developing process in a sequential order the model can be applied for highly structured environments as manufacturing industries or major projects most of the time is used by software developers in IT modeling.

Fig.no.3 Water fall Model applied to manufacturing business organization
The water fall model is based on five main variables to set a production manufacturing process. We also distributed the model to 3 phases of implantation to adapt with the Namira production business model. The first phase is based on the first and second factor requirements and design. The second phase consists from the implementation factor, and the third phase consists of verification and feedback. Elements that represent organized production processes are sales (V), supplies (A), (C) costs and time related to the parameters. Using the model concept, we have developed the application illustrated on figure number 4, which allows the production phase to be organized based on customer requirements and helps to minimize overproduction to zero. The efficiency of the production line helps in minimizing costs and effort, helping the organization to get over high levels of complexity activating in an environment without this application.

Table no.1 A systematic application process to organize production quantities based on water fall model for Namira business production Srl

<table>
<thead>
<tr>
<th>Date</th>
<th>Inventory</th>
<th>Entrance</th>
<th>Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Units</td>
<td>Manufacturing and Inventory cost / unit</td>
<td>Total Manufacturing inventory costs</td>
</tr>
<tr>
<td>n_i</td>
<td>Csi</td>
<td>m_i</td>
<td>Ci</td>
</tr>
<tr>
<td>3-Jan-015</td>
<td>18</td>
<td>325</td>
<td>5,850</td>
</tr>
<tr>
<td>5-Jan-015</td>
<td>6</td>
<td>325</td>
<td>1,950</td>
</tr>
<tr>
<td>6-Jan-015</td>
<td>64</td>
<td>325</td>
<td>20,800</td>
</tr>
<tr>
<td>7-Jan-015</td>
<td>82</td>
<td>325</td>
<td>26,650</td>
</tr>
<tr>
<td>8-Jan-015</td>
<td>100</td>
<td>325</td>
<td>32,500</td>
</tr>
<tr>
<td>9-Jan-015</td>
<td>87</td>
<td>325</td>
<td>28,275</td>
</tr>
<tr>
<td>10-Jan-015</td>
<td>73</td>
<td>325</td>
<td>23,725</td>
</tr>
<tr>
<td>12-Jan-015</td>
<td>61</td>
<td>325</td>
<td>19,825</td>
</tr>
<tr>
<td>13-Jan-015</td>
<td>46</td>
<td>325</td>
<td>14,950</td>
</tr>
<tr>
<td>14-Jan-015</td>
<td>34</td>
<td>342</td>
<td>11,628</td>
</tr>
<tr>
<td>15-Jan-015</td>
<td>68</td>
<td>342</td>
<td>23,256</td>
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<tr>
<td>16-Jan-015</td>
<td>58</td>
<td>342</td>
<td>19,836</td>
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<tr>
<td>17-Jan-015</td>
<td>40</td>
<td>342</td>
<td>13,680</td>
</tr>
<tr>
<td>19-Jan-015</td>
<td>23</td>
<td>354</td>
<td>8,142</td>
</tr>
</tbody>
</table>
The application involves manufacturing, supply, and storage processes \( C_S_i \), the cost of manufacturing and supply-as-consisting of price of the requirement associated with transport costs; The cost of storage, which includes all expenses related to the maintenance, storage and rehabilitation of products during storage; Penalty or cost of breaking stock, occurs usually when differences arise between supply and demand.

Conceptually, Time parameters are reference items in any manufacturing and stock model. In our application, the size of the period between the manufacturing and entry into stock and new supply \( (q_i) \), and duration of supply \( (C_{a_i}) \) depend on these two indicators to construct other time parameters of time which can be represented by number of days between ordering \( (\alpha) \) and its arrival number of days between two replenishment \( (\beta) \).

**Conclusions**

The BOBZURUB model has proven its ability combining with waterfall model to bring efficiency process of manufacturing to stabilize and minimize the business complexity environment of production lines process in Namira business Production Srl. We have confirmed using our innovative administration system application developed to automotive and systemize manufacturing process on a business organization model that innovation is an original attribute of complexity, by succeeding to minimize UN needed production to zero. With important conclusion and by proving that complexity is an original attribute of a system, we can conclude also that innovation is an attribute of a system in case of using integration to create new developed process.

Innovations have several types and extended for several interpretations, but it was most commoned used on Information technology, the terms have widened to reach social studies.
The study of complexity science can help to understand economic and business phenomena’s by characterizing them as a complex adaptive systems, and try to find similar characteristics from other scientific disciplines, and try to use non-linear approaches based on their rules to see what kind or results can produce and if its enough to understand the phenomena.

References