

Integration of QFD with Different Heuristics to Make Volatile Supply Chains Agile as well as Lean

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Abstract

In this era of turbulent global markets consumer needs are varying constantly for this reason supply chains should be made more flexible to incorporate these dynamic needs. On the supply chain management front besides making efforts to make them lean element of agility should be included. In this paper author and co-author tried to achieve the above task by integrating QFD with Qualitative forecasting techniques, Analytical Hierarchy Process (AHP) Lean methodology and Fuzzy logic. Qualitative Forecasting techniques (market research and Delphi technique) used in this study will assimilate the dynamic customer needs which are prioritized through AHP. In order to make the supply chain lean certain lean attributes (LA'S)⁵ obtained through interpreting customer needs are used as (WHAT'S) these are linked with Lean Enablers (HOW'S) in relationship matrix in HQQ. Further the relationships are established by using fuzzy logic in order to make them definitive. The whole methodology is comprehensively explained in this paper.

Keywords: Quality Function Deployment (QFD), Analytical Hierarchy Process (AHP), Lean Attributes (LA'S), Lean Enabler's (LES), Agile

Does Theft of Water Constrains the Adoption of Modern Irrigation Technologies or Vice Versa?

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Abstract

Water theft carried out by manipulating water meters constrains the implementation of water-saving technologies which themselves affect the incentives for theft. Using a theoretical model of centralized management, we show that theft is more likely when monitoring costs are high and punishment levels are weak. The adoption of water-saving technologies is more likely when monitoring costs are low and water prices are high, though only within the range of low to medium prices. The basic analysis is extended to allow for collusion between cheating farmers and the monitor. In the model we show that collusion is more likely when punishments are weak. We test the model predictions using farmer-level data from Tunisia for the years 2004–08, relying on instruments that proxy for unobservable monitoring costs. Although the econometric evidence supports the majority of the theoretical findings, various economic, socioeconomic, physical, and geographical factors can counteract or supplement these effects.

Keywords: Collusion, Centralized Water Management, Tunisia, Water Theft, Water-Saving Technology

Fuzzy Model of Development of the Organization's Human Capital at the Expense of the Investment Process⁹

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Abstract

This article focuses on the development of the method of formation of the organization's investment strategy, consisting of several business-units. This method is based on a fuzzy model. In the face of fierce competition and limited resources, the organization's leadership in the implementation of the strategic development program is faced with the problem of the optimal

⁹ The research is made with financial support of Russian Foundation for Basic Research under science project № 16-36-00059 (in terms of the development of appropriate instruments determine the optimal investment allocation structure in the organization's human capital, consisting of several business-units) and Russian Humanitarian Science Foundation under science project № 15-32-01027 (in terms of the development of the corresponding fuzzy multiple instruments).

own financial resources allocation, taking into account existing economic uncertainties. One of the priority areas of investment is organization's human capital. Increasing its level is an important precondition for sustainable development and the achievement of its strategic objectives outlined in the strategic development program. Most organizations include several business-units, endowed with different functional responsibilities. This results not only in terms of differences in target problems business-units, but also to differences in the list of strategic tasks. Also worth noting is that the achievement of the various business-units of different tasks affect the achievement of organizational goals. Thus, in order to take account of this nonequivalence business-units to the overall organization's strategic goals is necessary to develop such instruments, which would accelerate the achievement of the organization's strategic objectives through the rational allocation of human capital investment, taking into account their differences and the varying degrees of influence. The work is based on modifications of the author's conceptual model of organization's human capital development by investing in his funds and author of fuzzy dynamic model optimization of human capital investment. The objective function of the model is the integral index, taking into account the degree of achievement of the organization's strategic objectives, depending on the degree of influence of each business-unit in the organization's strategic objectives. Optimization variables are the share of investment funds distribution among all members of the organization's business-units in areas of investment and years. Note that some of the model parameters is given by fuzzy variables. Model calculations results allow to generate the organization's investment strategy in the field of development of its human capital, taking into account the initial parameters of all business-units.

Keywords: Organization's Human Capital, Economic and Mathematical Model, Investment Structure's Optimization, Organization's Strategic Management, Fuzzy-Set Approach

Relational Capital of Enterprises - Identification of the Phenomenon

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Abstract

Today's world is based on relations. Efficient communication within the business environment, as well as sales of products or services depends to a large extent on good relations. Nowadays, enterprises are not interested in random single transactions, but in long-term cooperation. This applies to dealings with customers, suppliers, as well as with competition. The importance of relational capital in functioning of the contemporary organizations have been emphasized in numerous scientific publications [for instance: Doz, Hamel 2006, Bamford, Gomes-Casseres, Robinson 2003, Child, Faulkner, Tallman 2005, Spaulding 2012, Łobos 2000, Łobos 2005, Oblój 2007, Bombiak 2011]. According to the studies, the organizations that want to survive in the market and be competitive need to create appropriate relations with the business environment. Today, shaping the relational capital of an enterprise, as well as creating a network of business relations is the key factor determining development of an organization. Objectives: Given the foregoing, the study attempts to address the question whether a high level of relational capital may be a condition of maintaining competitive advantage. Data and Methods: In order to achieve the target, world literature on the subject of relational capital of enterprises has been analyzed. Results: As a result of the carried out analysis, significant differences in the perception of the phenomenon over the years have been noticed. At first, relational capital was seen only from the angle of customers, being a list of people, and relations between an enterprise and its customers. Today, relational capital is perceived as an ability to shape relations also with other stakeholders. It is thought to be a result of creating appropriate relations with customers, distributors, suppliers and other entities from the business environment. It includes such elements as a trademark, customers and their loyalty, distribution channels, agreements, contracts and arrangements with subcontractors, commercial partners, investors, banks, public institutions etc. Conclusions: Creation of relational capital is an inherent feature of any organization being an open system permanently exchanging material and non-material resources with the environment. However, having a relational capital does not condition permanent generation of organization's revenue. The essence of relational capital is continuous initiating and creating new contacts that build a network. The evolving nature of relational network makes it necessary to seek for new partners due to the fact that relations are constantly changing.

Keywords: Relational Capital of Enterprises, Intellectual Capital, Business Relationships with the Environment

INVESTMENT & FINANCIAL CRISIS

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Oil Prices and European Stock Returns: A Sectoral Investigation

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Abstract

We investigate the effects of oil price changes on returns of European sectoral stock indexes. We run regressions for extended versions of different market equilibrium models incorporating oil price changes. We also separate different market situations based on the oil price. Our results suggest that from among the investigated European industries oil and gas companies have higher exposure to oil price changes than companies from other industries. When examining the broad oil and gas industry on a sub-sector level we can also detect some significant differences.

Keywords: Asset Pricing, Oil Price