Model-based Governance for Smart Organizational Future

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BOOK OF ABSTRACTS

Editors

Fabio Nonino, Stefano Armenia, Gandolfo Dominici

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WORKSHOP SCOPE

Today, the effective governance of any organisation - be it a government, a firm, a state-owned entity, or a charity - needs to be based on resilience, transparency, accountability, evidence of effectiveness. This need is stimulated by the all-encompassing public scrutiny of organisations, a trend continuously growing due to the advances in IT. This process has been described in terms of the emergence of technologies and practices of calculation in the context of governance.

A common problem is that organisations frequently approach governance as a process of conforming strictly to rules and regulations instead of considering it from a wider systemic perspective.

In this workshop, we called for both practical and theoretical research proposals for a better modeling of organizational systems as well as examples of successful application of model-based governance to any kind of organizational system.

WORKSHOP ORGANIZING INSTITUTIONS

The workshop has been jointly organized through the collaboration in place between BSLab, the Business Systems Laboratory, and SYDIC, the System Dynamics Italian Chapter, and thanks to the collaboration and technical support of DIAG Sapienza, the Department of Computer, Control and Business Engineering "Antonio Ruberti" at the Sapienza University of Rome.

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WORKSHOP HOSTING INSTITUTION

This Workshop has been hosted in Rome, at the premises of DIAG Sapienza, the Department of Computer, Control and Business Engineering "Antonio Ruberti" at the Sapienza University of Rome.

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NSS to Support Optimal Social Agreements

Thyago Celso Cavalcante Nepomuceno
PH.D Student, Universidade Federal de Pernambuco, Brasil.
e-mail: nepomuceno@dis.uniroma1.it Corresponding author

Jadielson Alves De Moura
PH.D Student, Universidade Federal de Pernambuco, Brasil
e-mail: dielson10@hotmail.com

Ana Paula Cabral Seixas Costa;
Associate Professor of Universidade Federal de Pernambuco, Brasil
e-mail: apcabral@ufpe.br

Abstract

Based on MBTI (Myers, 1987) and TKI (Thomas and Kilmann, 1974) models of personality, we develop a Negotiation Support System that uses provided information concerning personality traits and negotiation styles of opponent/collaborator negotiators to support Pareto's social optimum agreements. Despite several tools that have been developed in order to improve the negotiation process and mitigate the lack of face-to-face interaction, mechanisms that gather nonverbal information with regard to the personality traits and negotiation behavior are rarely present in the literature. Since humans are the most complex and flexible part of any communication system (DeRosa et al., 2004), information about preferences and negotiation behavior tends to improve the communication process and negotiation outcomes (Yiu and Lee, 2011). Although negotiation support approaches provide IT support for complex negotiations (Schoop et al., 2014), they fail to automate negotiation process and to supply personality and negotiation style information which help negotiators to adjust their tactics, strategies an responses according to their personal information with competitors (Gilkey and Greenhalgh, 1986).

In this context, the bargaining game theory approach devotes considerable importance to understand strategies that are intrinsically bound to personalities. The backward inductions, dominant strategies and concepts of non-credible threats from traditional economic games and models (see Leontief 1946; Merlo and Wilson 1995; Rubinstein 1982; Sutton 1986) help to understand the agents and negotiators' behavior into an outcome that provides greater social

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satisfaction with just and efficient agreements. The present study proposes the development of a Web-NSS (www.negplace.com) that besides to incorporate traditional tools of a NSS, also integrate personality and negotiation information to improve the communication process during the negotiation process in order to obtain better social outcomes, defined as the outcome that maximize the group satisfaction.

The design and development of NegPlace system were based on free platforms of software development and database system, and the MBTI and TKI models are applied to recognize the personality and negotiation styles of each negotiator (Myers, 1987). When the negotiator accesses the NegPlace system for the first time, they must complete a profile and respond to personality and negotiation questionnaires. These data are processed and provide input to the MBTI and TKI models which, in the final process, outcomes the personality trait with the combination of bipolar dimensions: Extraversion and Introversion; Sensing and Intuition, Thinking and Feeling, and Judging and Perceiving, and the negotiation styles: Avoiding, Accommodating, Competing, Collaborating, and Compromising. Once recognized, the personality and negotiation styles become an important point of information that is used to draft both communication and negotiation strategies.

A participatory budgeting negotiation case is proposed with participation of one hundred and two individuals which have performed more than three hundred interactions to expose the NegPlace utility and contribution to collaborative aspects in the Bargain Theory of negotiations. The experiment consists of a dynamic negotiation of complete and perfect information in which three parts, the public administration representative (P), neighborhood A community leader (A) and neighborhood B community leader (B), bargain a municipal budget for public works. Our results support the conceptual NegPlace model in which the best collective agreement is reached when information about one's personality provides enough argument to discredit threats.

Keywords: Pareto Optimality. Negotiation Process, Information Technology, Game Theory.

REFERENCES

DeRosa, D.M., Hantula, D. a., Kock, N., D'Arcy, J. (2004). Trust and leadership in virtual teamwork: A media naturalness perspective. Hum. Resour. Manage. 43, 219–232.

doi:10.1002/hrm.20016

Gilkey, R.W., Greenhalgh, L., 1986. The role of personality in successful negotiating. Negot. J. 2, 245–256. doi:10.1007/BF00999110

Leontief, Wassily (1946), "The Pure Theory of the Guaranteed Annual Wage Contract," Journal of Political Economy, (54:1), pp 76-79.

Merlo, A., and C. Wilson, 1995, "A stochastic model of sequential bargaining with complete information," Econometrica (63), pp 371—399.

Myers, I.B., 1987. The Myers Briggs Type Indicator. Consulting Psychologists Press, Palo Alto.

Rubinstein, A., 1982, "Perfect equilibrium in a bargaining model," Econometrica (50), pp 97-109

Schoop, M., van Amelsvoort, M., Gettinger, J., Koerner, M., Koeszegi, S.T., van der Wijst, P., 2014. "The Interplay of Communication and Decisions in Electronic Negotiations: Communicative Decisions or Decisive Communication?," Gr. Decis. Negot. (23), pp 167–192.

Sutton, J., 1986. "Non-cooperative bargaining theory: an introduction," Review of Economic Studies (53), pp 709—724.

Thomas, K.W., Kilmann, R.H., (1974). Thomas-Kilmann Conflict Mode Instrument. Xicom, Tuxedo, New York, NY.

Yiu, T.W., Lee, H.K. (2011). How Do Personality Traits Affect Construction Dispute Negotiation? Study of Big Five Personality Model. J. Constr. Eng. Manag. 137, 169–178.

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Can we consider Stakeholder Networks CAS or MAS? An interpretative framework

Mario Tani
Assistant Professor of Management, Department of Economics, Management, Institutions, University of Naples Federico II, Italy
e-mail: mario.tani@unina.it
Corresponding author

Mauro Sciarelli,
Full Professor of Management, Department of Economics, Management, Institutions, University of Naples Federico II, Italy
e-mail: mauro.sciarelli@unina.it

Abstract

Managers should acknowledge that modern companies are just a single part of a complex, multi-layered web of different relationship linking the different actors in the local system each other (Sydow and Windeler, 1998). Enterprises are tightly connected with their own environment as they will depend on some of the actors in the environment to get access at resources the other actors control, and vice versa (Pfeffer and Salancik, 1978). A similar reasoning can be used to link these various webs together in higher level network tightly connected.

According to Stakeholder Management Theory (Freeman, 1984) managers should take into account the effect that their actions can have, or receive, along these different networks from the other actors sharing the same system (at the various levels). According to this research stream the enterprise itself is seen as part of a broader stakeholder environment made of several stakeholders interacting at several levels both between themselves and between each of them and the enterprise (Freeman and Evans, 1990). As a consequence, using Stakeholder Management Theory managers should define the company's actions in a way to "create as much value as possible for stakeholders, without resorting to trade-offs (between them)" (Freeman et al., 2010: 28). Moreover, the theory asks managers not to focus only on the economic consequence of their actions as these relationships themselves are multi-purpose ones that are only partially based on

economic reasons while combining social considerations, and environmental ones too (Harrison and Wicks, 2013).

One of the streams in this theory research (Sciarelli and Tani, 2012) has been focused on the need to manage these networks as a whole (Rowley, 1997). It follows that managers should take into account not only the stakeholders in direct relationship with the enterprise but even those in an indirect relationship – i.e. those that are able to influence the stakeholder in direct relationship with the enterprise (Sirgy, 2002; Sciarelli, 2007). In a interview Freeman, the father of Stakeholder Management Theory, hold that "… organizations, viewed as open-systems, are part of a broader network not isolated and independent units. Identifying stakeholder, and the interconnections between them too, is a crucial point for this approach" (Rusconi, 20071). In this view the network structure becomes relevant as it represents the paths indirect stakeholders influence power will go through to affect the enterprise's actions (Frooman, 1999: 198).

Moreover, considering the network structure, using the lens of generalized exchange (Harrison and Wicks, 2013) and taking into account the studies on stakeholder perception (Clarkson, 1999) this approach helps explain how taking into account stakeholder requests, or failing to do so, can come back to the enterprise with a far greater effect than what would be possible to explain looking only at the dyadic relationship between the enterprise and its direct stakeholders.

Stakeholder Networks share several important characteristics with multi-agent systems (MAS) (Woolridge, 2009) In fact the various stakeholders, despite being mutually interconnected, maintain their own their independence in defining their course of actions according to their own perception. Moreover, these networks are often so complex that no single stakeholder can have a clear comprehension of its real structure so they are obliged to decide their course of actions using only their limited, specific perception. Moreover, considering the network the enterprise is embedded beyond the simple model of an egonetwork (Rowley, 1997) it follows that these networks lack a designated controlling agent – i.e. the network's decision powers are decentralized.

1 Rusconi (2007: 17) refer to an interview Freeman has given for an article published in the 2005 in the journal "Non-Profit" by Baldarelli, Santi and Signori.

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At the same time, we can consider them even as complex adaptive systems (Cilliers, 1998). As they are composed of a large, unstable, number of actors with rich interactions that help the effect of each single influence to go beyond the dyadic relationship of the specific interaction has generated them generating even far greater impacts on the network as a whole. Moreover, exactly as CAS even stakeholder networks have to rely on stratified experiences of interactions changing the way each single actor reacts to the new stimuli.

Being able to model Stakeholder Network as Complex System can help in avoiding the shortfalls of the standard economic models looking for a short-term optimisation using a mono-disciplinary approach (Becker and Ostrom 1995; Berkes, Colding and Folke 2008).

In this paper, we analyse the main contributions in stakeholder management literature using the lens of complex system theory in order to identify if MAS and CAS can be used to get a better comprehension of these network.

Keywords: Stakeholder Management, Network, System Theory.

REFERENCES

Becker, C. D., Ostrom, E. (1995). Human ecology and resource sustainability: the importance of institutional diversity. *Annual review of ecology and systematics*, 113-133.

Berkes, F., Colding, J., Folke, C. (Eds.). (2008). *Navigating social-ecological systems: building resilience for complexity and change*. Cambridge, UK: Cambridge University Press.

Cilliers, P. (1999). 'Complexity and postmodernism. Understanding complex systems' Reply to David Spurrett. *South African Journal of Philosophy*, 18(2): 275-278.

Clarkson Centre for Business Ethics. (1999). *Principles of stakeholder management*. Toronto, CA: Clarkson Centre for Business Ethics, Joseph L. Rotman School of Management, University of Toronto.

Freeman, R. E. (1984). *Strategic management: A stakeholder approach*, Boston, USA: Pitman.

Freeman, R. E., Harrison, J. S., Wicks, A. C., Parmar, B. L., De Colle, S. (2010). *Stakeholder theory: The state of the art*. Cambridge, UK: Cambridge University Press.

Freeman, R.E., Evan, W. M. (1990). Corporate governance: A stakeholder interpretation. *Journal of Behavioral Economics*, 19(4): 337-359.

Frooman, J. (1999). Stakeholder Influence Strategies, *Academy of Management Review*, 24(2): 191-205.

Harrison, J. S., Wicks, A. C. (2013). Stakeholder theory, value, and firm performance. *Business ethics quarterly*, 23(01): 97-124.

Pfeffer, J. & Salancik, G.R. (1978). *The external control of organizations: A resource dependence perspective*. Harper & Row, New York.

Rowley, T.J. (1997). Moving beyond Dyadic Ties: A Network Theory of Stakeholder Influences, *Academy of Management Review*, 22(4): 887-910.

Rusconi G. (2007). Etica, responsabilità sociale d'impresa e coinvolgimento degli stakeholder, *Impresa Progetto (DITEA)*, 1.

Sciarelli, M. & Tani, M. (2013) "Network approach and Stakeholder Management". *Business Systems Review*, Vol.2(2 – SI: Selected papers from 1st B.S.Lab. International Symposium): 175-190.

Sirgy, M.J. (2002). Measuring corporate performance by building on the stakeholders model of business ethics. *Journal of Business Ethics*, 35(3): 143-162.

Sydow, J., & Windeler, A. (1998). Organizing and evaluating interfirm networks: A structurationist perspective on network processes and effectiveness. *Organization science*, 9(3): 265-284.

Wooldridge, M. (2009). *An introduction to multiagent systems*. Hoboken, USA: John Wiley & Sons.

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Community centrality and inter-community detection in spatial networks

Carlo Drago
Assistant Professor of Probability and Statistics, University "Niccolò Cusano", Italy.
e-mail: carlo.drago@unicusano.it - Corresponding author

Abstract

The aim of this work is to show a new approach to the analysis of spatial networks based on community detection and the relevance of the inter-community connections which can occur on the network. In order by considering this specific aim we adopt an approach based on identification of the different communities, their structural characteristics and then the identification of the different edges which are belong the different communities.

Spatial networks are complex systems which are specifically embedded on the space (Barthelemy 2011). Typical examples of spatial networks are transportation systems as roads and rails and more in general mobility patterns. Complex networks are characterized by a relevant hierarchical structure and a specific modular organization (Lancichinetti and Fortunato 2012).

Spatial networks can also be considered "complex" for their topological characteristics. Community detection is the identification of groups of nodes which show an intra-community higher density and a lower density by considering the density between different communities (Fortunato 2010).

In particular one of the relevant advantages of the community detection approach is the possibility to characterize a network discovering the relevant groups of nodes which are associated to specific functions on the network (Fortunato 2010). On the context of spatial networks are relevant because allow to analyzing phenomenon like traffic congestion (Nejad Mashayekhy Chinnam 2012).

In particular the analysis of the community structure is conducted using symbolic representations (Billard Diday 2003 Giordano Brito 2012). The identification of the different spatial communities represented by interval data can lead to a better understanding of the topology and the functioning of the network.

This understanding of the system can be obtained by considering a new approach on the analysis of the community structure using interval data and Symbolic Data Analysis (Drago 2016). These data and in particular interval representations which are considered on this work are useful to visualize the community structure and the most relevant communities.

An approach based on the community detection is considered in order to discover and characterizing the community structure of the network.

The advantage of using interval data representing the different communities is the possibility to concretely detect the information belong each community using all the structural characteristics of the community. In this sense we are able to understood the relevance of each community inside the entire network.

In particular we are interested to explore the different connections which can be detected over the different communities. The analysis of the community structure lead to the understanding of the communities which show an higher centrality as a whole then we are able to explore the inter-community linkages and their relevance on the network considered (Mahyar et al. 2015). So our approach consider firstly the identification of the community structure then the analysis of the relevant inter-community edges on the spatial network. These connections are very important on the network because they allow the communication between different relevant network parts. On this sense it is also important the number of the inter-community linkages which allow concretely the communications between different network parts.

The edge analysis of the different communities allows to classify each edge by considering their specific nature: edges which are belong a single community and edges which are belong nodes which are part of different communities. On this sense these edges are particularly important on spatial networks because some edges can to determine traffic and congestion on road networks (Austwick et al. 2013). In this way the identification of these "critical edges" can be very relevant and can be lead to improvement of the network efficiency.

The analysis of the spatial network were conducted in R language (R Core Team 2015).

Keywords: Spatial Networks, Complex Networks, Community Detection, .

REFERENCES

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Austwick, M. Z., O'Brien, O., Strano, E., & Viana, M. (2013). The structure of spatial networks and communities in bicycle sharing systems. PloS one,8(9), e74685.

Billard, L., & Diday, E. (2003). From the statistics of data to the statistics of knowledge: symbolic data analysis. Journal of the American Statistical Association, 98(462), 470-487.

Barthélemy, M. (2011). Spatial networks. *Physics Reports*, *499*(1–3), 1–101. Statistical Mechanics; Disordered Systems and Neural Networks; Physics and Society; Neurons and Cognition. http://doi.org/10.1016/j.physrep.2010.11.002

Drago, C. (2016). Exploring the Community Structure of Complex Networks. *FEEM Working Paper No*. *57.2016*. Available at SSRN: https://ssrn.com/abstract=2833789

Fortunato, S. (2010). Community detection in graphs. *Physics Reports*, *486*(3–5), 75–174. Physics and Society; Statistical Mechanics; Information Retrieval; Biological Physics; Computational Physics; Quantitative Methods. http://doi.org/10.1016/j.physrep.2009.11.002

Giordano, G., & Brito, M. P. (2012) Network Data as Complex Data Objects: An Approach Using Symbolic Data Analysis.Analysis and Modelling of Complex Data in Behavioural and Social Sciences, 38

Lancichinetti A & Fortunato S. (2012) Consensus Clustering in Complex Networks. *Scientific Reports*, 2

Mahyar, H., Rabiee, H. R., Movaghar, A., Ghalebi, E., & Nazemian, A. (2015). CS-ComDet: A Compressive Sensing Approach for Inter-Community Detection in Social Networks. In Proceedings of the *2015 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining* 2015 (pp. 89-96). ACM.

Nejad, M. M., Mashayekhy, L., & Chinnam, R. B. (2012). Effects of traffic network dynamics on hierarchical community-based representations of large road networks. In 2012 15th International IEEE Conference on Intelligent Transportation Systems (pp. 1900-1905). IEEE

R Core Team (2015). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL https://www.R-project.org/.

Yeang, C., Huang, L., & Liu, W. (2012). Recurrent Structural Motifs Reflect Characteristics of Distinct Networks. *2012 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining*, 551–557. http://doi.org/10.1109/ASONAM.2012.94

State organization as a complex system: explaining the US election using Mindset Theory

Davide Di Fatta

PhD Student in Economics, Department SEAAS, University of Messina

e-mail: davide.difatta@unime.it

Maurice Yolles

Business School, Liverpool John Moores University, Liverpool, UK,

e-mail: prof.m.yolles@gmail.com

Abstract

This paper aims to explain US election using mindset theory background, supporting theoretical argumentation with a content analysis. Basically, the interest lies in understanding the Donald Trump victory given the following view: the newly elected president was highly competent in projecting unsupported lies about what he would and could do, but also about his own character.

Using Mindset Theory, a theory that is capable of anticipating behaviour in living agencies, this paper proposes that Trump's political position can be represented as hierarchical popularism, with its certain characteristics. However, following a proposition by Pitrim Sorokin, western society is currently in decline, represented by cultural instability, which occurs when values become confused and behavioural circumstance as much as cultural values guide the development of ethics and ideology.

Keywords: Mindset Theory, Agency Theory, Complex Systems, Content Analysis, Trump

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REFERENCES

Allport, G.W. (1961). *Pattern and Growth in Personality*. New York: Holt, Rinehart & Winston.

Bandura, A. (1999). Social cognitive theory of personality. *Handbook of personality: Theory and research*, 154-196.

Bennett, E. M., Alpert, R., & Goldstein, A. C. (1954). Communications through limited-response questioning. *Public Opinion Quarterly*, *18*(3), 303-308.

Berelson, B. (1952). Content analysis in communication research. Free Press, New York, NY (USA).

Berger, P., & Luckmann, T. (1966). The social construction of knowledge: A treatise in the sociology of knowledge. *Open Road Media: Soho, NY, USA*.

Bernard, H. R. (2011). *Research methods in anthropology: Qualitative and quantitative approaches*. Rowman Altamira. Plymout (UK).

Birkimer, J. C., & Brown, J. H. (1979). Back to basics: Percentage agreement measures are adequate, but there are easier ways. *Journal of Applied Behavior Analysis*, *12*(4), 535-543.

Boje, D. (2004). *Welcome to Mindscapes*. Accessed 2017/11/01. Retrieved from: http://peaceaware.com/Mindscape/

Charney, N. (2016). The art of the lie: The art forgery guide to Donald Trump's tall tales, Salon, 2nd October, http://www.salon.com/2016/10/02/the-art-of-the-lie-the-art-forgery-guide-to-donald-trumps-tall-tales/, accessed January 2016.

Colson, T. (2016). We spoke to the professor who sparked a criminal investigation into the alleged 'lies' of Brexit's Leave campaign, Business Inside Trainer, 10th November, http://uk.businessinsider.com/brexit-criminal-investigation-leave-lies-professor-bob-watt-the-man-who-triggered-2016-11, accessed January 2017.

Di Fatta, D., Musotto, R., D'Aleo, V., Vesperi, W., Morabito, G., & Bue, S. L. (2016). Weak Ties and Value of a Network in the New Internet Economy. in *Social Media Data Extraction and Content Analysis*, Section 3, 66-77. IGI Global, Kansas State University (USA).

Di Fatta, D. & Musotto, R. (2017). Content and Sentiment Analysis on the online social networks (OSNs). in Data Analytics in Digital Humanities. Springer (forthcoming)

Dockens, W.S. III (2004), "The Shanghai mirror: the mathematical psychology of integration, Mindscapes and synchronicity-2", *Proceedings of the 48th Annual Conference of International Society for the Systems Sciences*, Pacific Grove, CA

Editorial, Unethical amnesia' could explain some of Donald Trump's forgetfulness, AOL News, 10th December, www.aol.com/article/news/2016/12/10/trump-unethical-amnesia-explain-forgetfulness/21624287/, accessed January 2017.

Fink, G., Dauber, D., & Yolles, M. (2012). Understanding organisational culture as a trait theory. *European Journal of International Management*, *6*(2), 199-220.

Fink, G., & Yolles, M.I., (2017forthcoming), Political meaning of mindset types created with Sagiv-Schwartz values, *European J. Cross-Cultural Competence and Management*, in process.

Garvey, J. (2016). *The Persuaders: The hidden industry that wants to change your mind*. Icon Books Ltd. London (UK).

Green, J. & Issenberg, S. (2016). The final week: inside Trump Bunker. Magzter. Source: https://www.magzter.com/articles_new_reader/detail/4212/192194/5811ceb7282d7

Greenspan, A. (2016). I Happen To Be A Fan Of Paul Ryan. *Value Walk*. May, 26. Source: http://www.valuewalk.com/2016/05/alan-greenspan-happen-fan-paul-ryan/

Hayes, A. F., & Krippendorff, K. (2007). Answering the call for a standard reliability measure for coding data. *Communication methods and measures*, *1*(1), 77-89.

Henderson, B., Lawler, D., Burke, L. (2017). Donald Trump attacks alleged Russian dossier as 'fake news' and slams Buzzfeed and CNN at press conference, The Telegraph, January 11th, www.telegraph.co.uk/news/2017/01/11/donald-trump-kremlin-blast-fabricated-report-russian-ties-asfbi/, accessed January 2017.

Hodder, I. (1994). The interpretation of documents and material culture. *Sage biographical research*, *1* (9), 171-188.

Ignazi, P. (1992). The silent counter- revolution. *European Journal of Political Research*, *22*(1), 3-34.

Kaplan, A., & Goldsen, J. M. (1965). The reliability of content analysis categories. Language of I Politics, 83-112.

Kilkenny , K. (2016). The Case for a Trump Impeachment, Pacific Standard, 4th October, https://psmag.com/the-case-for-a-trump-impeachment-f2c10b819758#.8fbd5f5fl, accessed January 2017.

ISBN: 9788890824258

Kirk, A., Dunford, D. (2016). EU referendum: The claims that won it for Brexit, fact checked, The Telegraph, 29 June, www.telegraph.co.uk/news/2016/06/22/eu-referendum-fact-checking-the-big-claims1/, accessed January 2017.

Krippendorff, K. (1980a). Content Analysis: An Introduction to its methodology, Sage Publications, Beverly Hills, California (USA).

Krippendorff, K. (1980b). Validity in content analysis. In E. Mochmann (Ed.) pp. 69-112. Frankfurt, Germany.

Krippendorff, K. (2004). Reliability in content analysis. *Human Communication Research*, *30*(3), 411-433.

Krippendorff, K. (2011). Computing Krippendorff's alpha reliability. *Departmental papers (ASC)*, 43.

Krippendorff, K. (2012). Content analysis: An introduction to its methodology (third edition). New York. Sage.

Krippendorff, K., & Bock, M. A. (2009). *The content analysis reader*. Sage. Los Angeles (USA)

Marcotte , A. (2016). Trump and Brexit: Right-wing populism of the two is rooted more in base nationalism than in economic insecurity, Salon, 24th June, www.salon.com/2016/06/24/trump_and_brexit_right_wing_populism_of_the_two_is_rooted_more_in_base_nationalism_than_in_economic_insecurity/, accessed January 2017.

Maruyama, M. (1974). Hierarchists, Individualists, and Mutualists: Three paradigms among planners. *Futures* 6(1), 103-113.

Maruyama, M. (1980). Mindscapes and science theories. *Current Anthropology* 21(2), 589-599.

Maruyama, M. (1988). Dynamics among Business Practice, Aesthetics, Science, Politics and Religion. *Cultural Dynamics* 1(3), 309-335.

Neiwert, D. (2016). Trump and Right-Wing Populism: A Long Time Coming, 21st June, www.politicalresearch.org/2016/06/21/trump-and-right-wing-populism-a-long-time-coming/#sthash.XUnLyjNB.dpbs, accessed January 2017.

Oyserman, D., Coon, H. M., Kemmelmeier, M. (2002). Rethinking individualism and collectivism: evaluation of theoretical assumptions and meta-analyses. *Psychological bulletin*, *128*(1), 3.

Schwartz, S. H. (1994). *Beyond individualism/collectivism: New cultural dimensions of values*. Sage Publications, Inc.

Sagiv, L., & Schwartz, S. H. (2007). Cultural values in organisations: insights for Europe. *European Journal of International Management*, *1*(3), 176-190.

Schwartz, S.H. (1990). Individualism-Collectivism. Critique and Proposed Refinements. *Journal of Cross-Cultural Psychology*, 21(2), 139-157.

Schwartz, S. H. (1990). Individualism-collectivism critique and proposed refinements. *Journal of cross-cultural psychology*, *21*(2), 139-157.

Sorokin, P. A. (1962). *Social and cultural dynamics*. Transaction Publishers. New Brunswick (USA).

Tipaldo, G. (2014). L'analisi del contenuto e i mass media. Bologna, Italy. Il Mulino.

Thompson, L., & Fine, G. A. (1999). Socially shared cognition, affect, and behavior: A review and integration. *Personality and Social Psychology Review*, *3*(4), 278-302.

Triandis, H. C. (2001). Individualism- collectivism and personality. *Journal of personality*, *69*(6), 907-924.

Trump, D. (2015). Crippled America: How to make America great again. New York, NY, (USA), Simon & Schuster Ed.

Van Egeren, L.F. (2009). A Cybernetic Model of Global Personality Traits, *Personal Social Psychology Review*, 13(2)92-108.

Wagner, J. A., & Moch, M. K. (1986). Individualism-collectivism: Concept and measure. *Group & Organization Management*, *11*(3), 280-304.

Westle, B., & Niedermayer, O. (1992). Contemporary right- wing extremism in West Germany. *European Journal of Political Research*, *22*(1), 83-100.

Yolles, M. (2006). *Organizations as complex systems: An introduction to knowledge cybernetics* (Vol. 2). IAP.

Yolles, M., & Fink, G. (2013). An Introduction to Mindset Theory. *Available at SSRN 2348622*.

Yolles, M.I., Fink, G., (2014d). Modelling Mindsets of an Agency, Journal of Organisational Transformation & Social Change, Vol. 11 No. 1, April, 2014, 69–88

Yolles, M., & Fink, G. (2014a). Personality, pathology and mindsets: part 1–agency, personality and mindscapes. *Kybernetes*, *43*(1), 92-112.

Yolles, M., & Fink, G. (2014b). Personality, pathology and mindsets: part 2–cultural traits and enantiomers. *Kybernetes*, *43*(1), 113-134.

ISBN: 9788890824258

Yolles, M., & Fink, G. (2014c). Personality, pathology and mindsets: part 3–pathologies and corruption. *Kybernetes*, *43*(1), 135-143.

Yolles, M., Frieden, B. R., & Kemp, G. (2008). Toward a formal theory of socioculture: A yin-yang information-based theory of social change. *Kybernetes*, *37*(7), 850-909.

Yuhas, A. (2016). How does Donald Trump lie? A fact checker's final guide, The Guardian Newspaper, 7th Novermber 2016, https://www.theguardian.com/us-news/2016/nov/07/how-does-donald-trump-lie-fact-checker, accessed January 2016.

Zetterberg, H. L., (1997). The Study of Values. In R. Swedberg, & E. Uddhammar, (eds.), *Sociological Endeavor*: 191-219. Selected Writings. Stockholm: City University Press.

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BOOK OF ABSTRACTS

'How Many Times Should my Simulation Run?' Power Analysis for Agent-Based Modeling

Raffaello Seri
Professor of Econometrics, Department of Economics & Center for Nonlinear and Complex Systems, University of Insubria, Italy
e-mail: raffaello.seri@uninsubria.it
Corresponding author

Davide Secchi,
Professor of Organizational Cognition, COMAC Research Cluster, Centre for Human Interactivity (CHI), Department of Language and Communication, University of Southern Denmark-Slagelse, Denmark
e-mail: secchi@sdu.dk

Abstract

We explore the issue of how many times a simulation should run. This is an often neglected issue that, sooner or later, all modelers dealing with simulations of complex systems encounter. The literature takes an agnostic stance on how many runs–per configuration of parameters–a simulation is to be performed. In fact, the focus has mostly been on defining the 'steps,' the time, or the interactions within each run through sensitivity and convergence analysis.

Our central assumption is that the number of runs to perform in a simulation is crucial for results to bear some meaning. Of course, this is not true for all simulations and it depends on scope, nature of the simulated phenomenon, purpose, and level of abstraction. Suffice it to state here that for social simulations with a strong stochastic component where emergence and complexity make results differ even within the same configuration of parameters, then knowing how many times are enough for differences to emerge (or not) becomes an extremely relevant information.

Therefore, we discuss the use of statistical power to decide the number of runs of an agent-based model. We first try to indicate–very broadly–to what type of simulations this approach may apply. Then, mediating from research on sample size determination for the behavioral sciences, we introduce some considerations on statistical power analysis and testing theory. Statistical power is the probability to

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reject the null hypothesis when it is false. High power gives the researcher the confidence that Type-II error is under control and that potentially meaningful results are not discarded on the basis of a false null hypothesis being wrongly accepted.

We provide an overview of how statistical power analysis can be applied to agent-based models and simulations. The objective is accomplished explaining why modelers should employ measures of power. The article also highlights some of the important positives of using this tool in ABM, specifically (a) determining the number of runs, (b) avoiding models that can be better analyzed with simpler tools, and (c) learning how to manipulate parameter values.

We highlight the dangers of underpower, i.e. the situation in which power is not sufficient, and overpower, i.e. the situation in which power is too high. As concerns underpowered simulations, in this case tests may fail to reject null hypotheses that are, in fact, false. As concerns overpowered studies, the risk is that they may lead modelers to notice effects so small that are not worth considering. All in all, overpowered simulations end up being less reliable than appropriately powered simulations. But it is clear that underpower is generally more dangerous than overpower. As a consequence of this, we discuss the appropriate levels of Type-I and Type-II error rates to be used in computational simulations.

As an illustration, we take an agent-based model (ABM) with a strong stochastic component and provide two examples that show how crucial the issue is and, at the same time, offer a practical guide on how to conduct the computation. Implications and concluding remarks follow.

Keywords: Agent-Based Models, Statistical Power, Number of Runs.

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The Transformation Toward Service Innovation of IT Firms

Rich Lee
National Sun Yat-Sen University, Taiwan.
e-mail: richchihlee@gmail.com
Corresponding author

Abstract

There were significant layoffs of big IT firms such as Microsoft [1], HP [2], and Cisco [3], etc. in the past few years. The driving forces pushing these sounded firms to transform are: (1) the social-economic paradigm has shifted toward the service that can generate the new revenue stream; (2) the customers are no longer satisfied with the vendors still offer the good-dominant logic perspective; (3) the high reliability and capacity of equipment causes the reluctant continuous buying; and (4) the saturated and thin-margin IT market suffocates the equipment vendors. At the same time, these firms also began to transform their organization, products and services to cope with the economic paradigm shifts toward the service innovation [4]. Higher visions have been brought up, such as Smart City, Internet of Things, Artificial Intelligence, drive the further thinking about where and how the society, the business, and the living should be in the future.

***Keywords*:** System Dynamics, Business Transformation, Service Science.

Transformation Model

This paper examined their initiatives as the evidences of these firms and revisited the existing theories to elaborate the proposed business transformation model, illustrated in **Figure 1**, to disclose the insights about organizational changes toward the emerging of service innovation.

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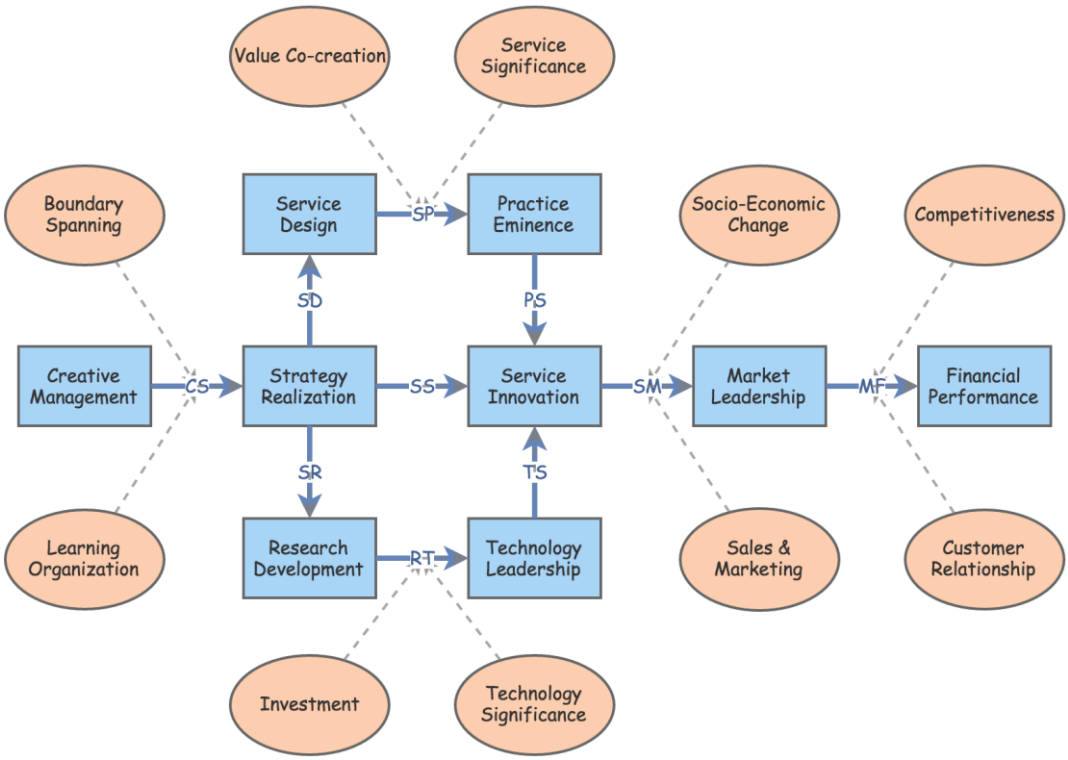

Figure 1. Business Transformation Model

Model Configuration

The proposed model is to aim to understand how the Financial Performance is influenced by the Market Leadership under various situations of the Competitiveness of the services and the Customer Relationship, shown as Formula (1). The Market Leadership relates to the Service Innovation and the capabilities of adapting the socio-economic change and the Sales and Marketing, shown as Formula (2). The Service Innovation is a composite effect of: (1) Practice Eminence (2) Technology Leadership and (3) Strategy Realization, shown as Formula (3). The Practice Eminence is an accumulative capability of the Service Design and the synergy of the Value Co-creation and the Service Significance, shown as Formula (4). The Research Development, along with the adequate Investment and the Technology Significance determines the success of Technology Leadership, shown as Formula (5). The Service Design and the Research Development are a part of the outcome of the Strategy Realization, shown as Formula (6) and (7). And finally, The Service Realization is the stimulus of the Creative Management of the Learning Organization possessing the Boundary Spanning capability, shown as Formula (8). the

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Financial Performance consolidates the abovementioned formulae into a holistic view, shown as Formula (9); apparently, the Creative Management is the originating driver of the Service Innovation.

$$FinancialPerformance = MarketLeadership + MF(\frac{d}{dt}Competitiveness, \frac{d}{dt}CustomerRelationship) \quad (1)$$

$$MarketLeadership = ServiceInnovation + SM(\frac{d}{dt}SocioEconomicChange, \frac{d}{dt}SalesMarketing) \quad (2)$$

$$ServiceInnovation = PS(PracticeEminence) + TS(TechnologyLeadership) + SS(StrategyRealization) \quad (3)$$

$$PracticeEminence = ServiceDesign + SP(\frac{d}{dt}ValueCoCreation, \frac{d}{dt}ServiceSignificance) \quad (4)$$

$$TechnologyLeadership = ResearchDevelopment + RT(\frac{d}{dt}Investment, \frac{d}{dt}TechnologySignificance) \quad (5)$$

$$ServiceDesign = SD(StrategyRealization) \quad (6)$$

$$ResearchDevelopment = SR(StrategyRealization) \quad (7)$$

$$StrategyRealization = CreativeManagement + CS(\frac{d}{dt}BoundarySpanning, \frac{d}{dt}LearningOrganization) \quad (8)$$

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$$
\begin{aligned}
&FinancialPerformance \qquad (9)\\
&= ((PS\left(SD(CreativeManagement\right.\\
&+ CS(\frac{d}{dt}BoundarySpanning, \frac{d}{dt}LearningOrganization))\\
&+ SP(\frac{d}{dt}ValueCoCreation, \frac{d}{dt}ServiceSignificance)\left.\right)\\
&+ TS\left(SR(CreativeManagement\right.\\
&+ CS(\frac{d}{dt}BoundarySpanning, \frac{d}{dt}LearningOrganization))\\
&+ RT(\frac{d}{dt}Investment, \frac{d}{dt}TechnologySignificance)\left.\right)\\
&+ SS(CreativeManagement\\
&+ CS(\frac{d}{dt}BoundarySpanning, \frac{d}{dt}LearningOrganization)))\\
&+ SM(\frac{d}{dt}SocioEconomicChange, \frac{d}{dt}SalesMarketing))\\
&+ MF(\frac{d}{dt}Competitiveness, \frac{d}{dt}CustomerRelationship)
\end{aligned}
$$

Conclusions

This paper makes the following managerial recommendations by applying the related theories and the arguable insights derived through simulations by manipulating the exogenous variables (the eclipse shape illustrated in Figure 1) and changing the behaviors—various forms of distribution—of the aforementioned functions (MF, SM, SP, etc.) as well as applying the : (1) the Competitiveness and the Customer Relationship plays the moderating role between the Financial Performance and its determinant—the Market Leadership (Liu, 2013); (2) the Socio-Economic Change overthrows the Market Leadership by the replacing disruptive innovation (Cagnin, Havas, & Saritas, 2013) (when the Service and the Technology are less significant); (3) when the Value Co-creation (Mahr, Lievens, & Blazevic, 2014) behaves as an s-curve, the Service Innovation will also follow the similar pattern; and (4) the Learning Organization (Senge, 2014) is the cornerstone of the Service Innovation.

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References

Ajmera, A., Pratap, B., Mukherjee, S., & Sadam, R. (17 de 8 de 2016). Cisco to Layoff about 14,000 Employees. Obtenido de REUTERS: http://www.reuters.com/article/us-cisco-systems-layoffs-idUSKCN10S05D

Cagnin, C., Havas, A., & Saritas, O. (2013). Future-oriented Technology Analysis: Its Potential to Address Disruptive Transformations. Technological Forecasting and Social Change, 80(3), págs. 379-385.

Carlborg, P., Kindström, D., & Kowalkowski, C. (2014). The Evolution of Service Innovation Research: A Critical Review and Synthesis. The Service Industries Journal, 34(5), págs. 373-398.

Darrow, B. (18 de 10 de 2016). Hewlett Packard Enterprise Prepares for More Layoffs. Obtenido de Fortune: http://fortune.com/2016/10/18/hpe-layoffs/

King, H. (29 de 7 de 2016). Microsoft to Cut about 2,850 More Jobs. Obtenido de CNN Money: http://money.cnn.com/2016/07/29/technology/microsoft-layoffs-july-jobs/

Liu, S. (2013). The Role of Service Innovativeness in the Relationship between Market Orientation and Innovative Performance: Moderator or Mediator? he Service Industries Journal, 33(1), págs. 51-71.

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BOOK OF ABSTRACTS

Analyzing the diffusion of a multi-side ICT platform for urban logistics services: A System Dynamics approach

Alberto De Marco
Associate Professor of Project Management
Department of Management and Production Engineering, Politecnico di Torino, Italy
e-mail: alberto.demarco@polito.it
Corresponding author

Giulio Mangano
Assistant Professor, Department of Management and Production Engineering, Politecnico di Torino, Italy.
e-mail: giulio.mangano@polito.it

Giovanni Zenezini
Ph.D. Candidate, Department of Management and Production Engineering, Politecnico di Torino, Italy
e-mail: giovanni.zenezini@polito.it

Anna Corinna Cagliano
Assistant Professor, Department of Management and Production Engineering, Politecnico di Torino, Italy.
e- mail: anna.cagliano@polito.it

Abstract

The rapid urbanization of world populations is increasing CO2 emissions due to logistics and handling activities (Wang et al., 2015). Therefore, all the problems related to the consequent growing freight transportation demand have led both public authorities and researchers to focus their attention on City Logistics (CL) initiatives. CL supports the integration of a logistics system wherein each actor is coordinated in order to reduce the negative impacts on citizens such as traffic congestion and air and noise pollution (Lam and Dai, 2015). Therefore, urban environments require specific policies at the local level, aimed at regulating a proper use of the available spaces and at identifying levels of satisfaction for different stakeholders with diverging interests.

In this context, forms of collaboration among the different parties are advisable to reach an increased level of efficiency for the logistics activities together with positive externalities for the

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environment. To this end, the URBeLOG project, funded by the Italian Ministry of Education and Research, was launched by a consortium of various CL stakeholders with the objective of developing a distributed, innovative, dynamic and participated platform of services and applications for last mile urban logistics. The platform is able to aggregate the involved stakeholders and manage the distribution process in real time. The URBeLOG platform has been designed for providing value-added services such as interface transactions for the use of logistics resources, dynamic tariff-based payments, management of certification and accreditation for the transport of goods within a city.

The purpose of this paper is to study the diffusion dynamics of the URBeLOG platform and its related services among the main potential user/customer segments in the Italian market. These are municipalities characterized by a limited traffic zone (ZTL), logistic service providers (LSP) and own freight carriers. The main levers of diffusion that have been considered are the Value Propositions that emerged during two different sessions of building a Business Model Canvas (Osterwalder and Pigneur, 2010). To this end, a variety of stakeholders were involved in order consider multiple points of view, namely: a public manager, an expert in urbanism, an ICT company, and a logistics consultant. The Business Model Canvas appears to be very useful, since it easily identifies the essential parts of a business, taking into account nine different pillars. One of them is the Value Proposition that can be defined as the combination of the benefits in terms of cost reduction, support for complex processes, and solutions to problems for the various customers. The identified Value Propositions have been then used as a basis to develop the diffusion model. For the municipalities, these are the "Green Credit System" that the platform is able to manage as interface between the public authority and the freight carrier and the effect related to the Policy Making Support and the Enforcement. For the Logistics Service Providers (LSP) the enhanced efficiency originated by a more proper routing management, the effect of focused adverting campaigns and the reduced footprint associated with the operations are considered as crucial levers of diffusion. Word of mouth is another aspect that has been taken into account. In the proposed study two kinds of word of mouth are analyzed: within a single population and cross-side between two populations, since it can be assumed that there are some forms of contacts among the different stakeholders that are likely to adopt the platform.

Basing on the Bass diffusion theory (Bass, 1969), the model is developed using the System Dynamics (SD) approach, in the light of its proven ability of simulating the behavior of diffusion via a

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system of interrelated causal feedback loops. The results of the simulation for a test bed area show that within the simulation timespan the three different populations of potential adopters almost fully join the URBeLOG platform. In particular, the 224 municipalities and the 9 LSPs complete the adoption process in 54 months. On the contrary, 2643 out of the 2688 own freight carriers adopt the proposed technology, thus the market saturation is not completely achieved. Therefore, the management of the green credits system, the policy making support and enforcement, the effectiveness of advertising campaigns, the routing efficiency and the effect related to a more environmental friendly foot print are crucial elements for entering the URBeLOG platform.

This work contributes to the field of studies associated with the investigation of the mutual relationships between the diffusion of innovative ICT systems among different interconnected populations of adopters in the CL arena. Also, this research fosters collaboration between public authorities and LSPs to identify the most important factors for adopting a shared IT CL platform. In addition, this work might assist public authorities in defining CL strategies by capturing the main levers related to CL policies prior to their implementation. From a LSP and own-freight carrier's point of view the study provides a tool to evaluate the performance of their activities with the adoption of new ICT technologies. Finally, the proposed model is a roadmap able to capture the enabling factors for the expansion of new forms of technologies and to simulate their behavior over time.

Keywords: City Logistics, Diffusion Model, System Dynamics.

REFERENCES

Bass, F.M. (1969). A New Product Growth for Model Consumer Durables. *Management Science*, 15(5): 215-227.

Lam, J.S., Dai, J. (2015). Environmental sustainability of logistics service provider: An ANP- QFD approach. *The International Journal of Logistics Management*, 26(2): 313-333.

Osterwalder, A., Pigneur, Y. (2010). *Business model generation: a handbook for visionaries, game changers, and challengers*. John Wiley and Sons.

Wang, Y., Sanchez Rodriguez, V.,Evas, R. L. (2015). The use of ICT in road freight transport for CO2 reduction – an exploratory study of UK's grocery retail industry. *The International Journal of Logistics Management*, 26(1): 2-29.

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BOOK OF ABSTRACTS

Examining the role of e-learning in promoting health awareness of young internet users (Case study: Girl students of Allameh Tabataba'i University)

Ali Asghar KIA
Associate Professor of Allameh Tabataba'i University, Tehran, Iran
E-mail: keya@atu.ac.ir

Abstract

The extension of education, considering communities extensiveness, the need for permanent education of citizens, time limitations for them, a lack of physical space, the costs of its construction and traffic problems have doubled the importance of e-learning in today' s society. The enhancement of effectiveness and efficiency of this method in education and training is another advantages of it, compared to traditional one. Health system can develop the internet using in healthcare field by creating suitable context and environment.

This study was conducted using a survey in 1392 with the aim of examining the role of e-learning in raising health awareness of young internet users. The population of this study were 200 female students of Allameh Tabataba'i University. In this research, Based on Cochran formula, 130 students has been selected as the sample size and for sample selection, random sampling has been used.

Inferential findings of the study show that the main hypothesis of the researcher has been accepted: The findings of the research show that according to Uses & Gratification Theory, health messages and information of medical & health websites have important role in changing attitudes and health behavior of users; and compared to other media, a large number of their health information needs is met through them. In addition, based on a Elaboration Likelihood Model, respondents consider these messages and information as important factor for strengthening and maintaining their own optimal health and they use them for managing their own health.

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Keywords: E-Learning, Promoting Health Awareness, Internet Users, Health.

REFERENCES

Rubin, A(1994). « Media uses and effects: A uses and gratifications perspective» , in Bryant & D.Zillmann.

Ruggiero,T.(2000).« Uses and gratification theory in the 21st century», Mass communication & society, 3:3-37.

Wathen, C. N. & Burkell, J. (2002). «Believe it or not: Factors influencing credibility on the Web». *Journal of the American Society for Information Science and Technology, 53,* 134-144.

Atkinson, N. L., Saperstein, S. L., & Pleis, J. (2009).« Using the internet for health-related activities: findings from a national probability sample». Journal of medical Internet research, 11(1), e4.

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Exploring the dynamical behavior of software systems quality attributes throughout its evolution: A case study from the maintenance process perspective

Eduardo Ferreira Franco
Department of Computer Engineering, University of São Paulo, Brazil
e-mail: eduardo.franco@usp.br
Corresponding author

Stefano Armenia
Dipartimento di Ingegneria Informatica, Automatica e Gestionale, Sapienza University of Rome, Italy
e-mail: armenia@dis.uniroma1.it

Kechi Hirama
Department of Computer Engineering, University of São Paulo, Brazil
e-mail: kechi.hirama@usp.br

Abstract

The dissemination of software systems in corporate environments is a reality, and some authors no longer consider them as a competitive advantage, but rather as commodities (Carr, 2003). Its mass diffusion made companies operational and managerial dependent on them (Melville, Kraemer and Gurbaxani, 2004). This phenomenon that has been accelerated by the increased competitiveness (Bharadwaj *et al*., 2013; Drnevich and Croson, 2013) and the increasing amount of information produced and consumed (Chen, Chiang and Storey, 2012).

In addition to its ubiquitous presence, software systems are operating for a longer time and demanding increasing resources. According to Jones (2008), the mean lifetime of management information systems (MIS) reached 20 years in 2005, twice the average lifetime measured on 1990. Consequently, some authors started to compare them to natural systems, where observed behaviors can be explained in terms of survival goals (Sauer, 1993). Their success (survival) is achieved through the continuous supply of resources that support the sustainment of its operation (Yeo, 2002).

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As a software system ages, it needs to be continuously modified and expanded to remain useful and meeting business needs and objectives (Lehman, 1980; Parnas, 1994). This longevity demands higher levels of effort being spent on maintenance activities, which in turn increases the share of maintenance costs when compared to total costs of ownership of a software system. INCOSE (2015) reported that approximately 80% of the total resources invested in software systems are due to the operating and maintenance phases. It is not surprisingly that nowadays the software inventory owned by a company usually represents a significant share of its assets (Wiederhold, 2006); thus they have a vital interest in preserving and maximizing the investments made to build their software libraries and optimize future ones. Nevertheless, what are the health conditions of those software systems? Avgeriou et al. (2016) state that "many large software systems are, like most of the world's state economies, in deep debt. However, this debt is technical, no financial."

These debts are due to violations of architecture and coding good practices that lead to quality decrease over time. The metaphor "technical debt" was created to describe the liability accumulated by the decisions taken, intentional or not, to deliver software systems containing sub-optimal code quality to achieve short-term business objectives (Cunningham, 1993). Over the time, it increases the maintenance costs, the number of unresolved errors, reduces its modifiability to meet current and future business needs, and therefore, harms users' satisfaction in the long-term evaluation.

For reducing this liability, the software system must be refactored to remove the violations incurred. The refactoring can be performed during maintenance activities, and there are many taxonomies for defining them. The ISO/IEC 14764:2006 standard was selected for describing the different activities and effort necessaries for sustaining a software system operation lifecycle.

Software systems operation and maintenance are social-technical endeavors, which involves interactions between technological components, people, information and organizational issues. From those interactions a dynamically complex environment arise, containing feedback loops, accumulations, delays between causes and effects, present emergent behaviors, and requires non-trivial and non-intuitive solutions (Georgantzas and Katsamakas, 2008).

The current work aims to explore how to prioritize function and nonfunctional maintenance activities to extend a software systems lifetime, for maximizing the investments made, while still being able to meet future needs and preserving sufficient levels of its quality characteristics.

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Software Process Simulation and Modeling (SPSM) is an area of research that has sought to contribute for better evaluating and predicting potential impacts of proposed software process improvements. It has been perceived as an approach: capable of analyzing complex business context; to support policy design and evaluation; and to perform tests and experiments for evaluating scenarios that would often be economically unfeasible to explore in the real world (Kellner, Madachy and Raffo, 1999).

The main contribution of this work is the proposal and development of a simulation model that permits to expand the current knowledge regarding the long-term implications that maintenance practices have on the software's quality characteristics, by uncovering elements and its causal effect relationships that account for the observed dynamical behavior and identifying dysfunctional consequences of current practices. The model will also support the design and evaluation (through scenario analysis) of maintenance policies that sustain adequate levels of quality attributes throughout the life cycle of software systems and optimize the tradeoff compromise between technical debt accumulation, maintenance cost, and software quality characteristics.

In the mid-80s, works applying the System Dynamics approach to study the dynamics associated with software projects contexts began to emerge (Abdel-Hamid and Madnick, 1982; Abdel-Hamid, 1984); which proliferated in the 90´s (Abdel-Hamid and Madnick, 1991; Waeselynck and Pfahl, 1994; Lin, Abdel-Hamid and Sherif, 1997; Wernick and Lehman, 1999). The existing published works focused on software development process or part of the development process leaving a gap not explored related to the implementation and post implementation phases of software systems initiatives; that involves the interaction with end users, maintenance activities, long-term evaluations, etc.

Recently, some works were published dealing with the operation, maintenance, and especially software sustainment regarding military systems of systems based on software (Ferguson, Phillips and Sheard, 2014; Sheard *et al*., 2014). Although dealing with long-term maintenance effects, those works did not distinct maintenance activities types nor did the deal with software quality characteristics. This is a case study research work, which proceeded in four phases: the sampling of a case, data gathering, model development and calibration, and data analysis. In the first phase, a single case was selected to increase the depth of the analysis, acquire knowledge and report experience. The criteria used for

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software system selection was based on the availability of its source code, its relations to the MIS application category, and being under development and maintenance for a long period.

For data gathering, the Software Quality Assessment base on Life-cycle Expectance (SQALE) method was used in conjunction with a static analysis tool. SQALE represents a method to estimate and manage technical debt by defining a quality model, which establish a list of nonfunctional requirements representing the "right code" and serves as a reference to estimates the software's technical debt (Letouzey and Ilkiewicz, 2012). Static analysis is the process of evaluating a system or component, based on its form, structure, content or documentation, which does not require program execution and can also be automated (ISO/IEC/IEEE 24765:2010). The SonarQube[2] tool was employed to gather the empirical data because it implements the SQALE methods and groups its metrics according to the SQuaRE's quality model (ISO/IEC 25010:2011); the proxy used in this work for characterizing the software quality attributes (functional suitability, reliability, security, and maintainability). In the third phase, the proposed model was developed applying the Systems Dynamics approach and extended the results presented in a previous work (Franco *et al*., 2016). The System Dynamics approach was developed in the 50's to study complex business problems (Forrester, 1961) and consists of an iterative process to define a dynamic hypothesis, develop a simulation model, test it, and to formulate and evaluate different intervention policies (Sterman, 2000).

The results of this work are expected to be obtained in the fourth phase, where new policies of software maintenance process could be and discussed, and the proposed model could be able to support the long-term evaluation consequences caused by of decisions taken during software acquisition, operation, and maintenance.

Keywords: Software Quality, Software Maintenance; Technical Debt; System Dynamics.

REFERENCES

Abdel-Hamid, T. (1984) *The Dynamics of Software Development Project Management - An Integrative System Dynamics Perspective*. Massachusetts Institute of Technology.

[2] http://www.sonarqube.org

Abdel-Hamid, T. and Madnick, S. (1982) 'A model of software project management dynamics', in *The 6th International Computer Software and Applications Conference (COMPSAC)*.

Abdel-Hamid, T. and Madnick, S. (1991) *Software Project Dynamics: An Integrated Approach*. First edit. Prentice Hall.

Avgeriou, P., Kruchten, P., Nord, R. L., Ozkaya, I. and Seaman, C. (2016) 'Reducing Friction in Software Development', *IEEE Software*, 33(1), pp. 66–73. doi: 10.1109/MS.2016.13.

Bharadwaj, A., El Sawy, O. A., Pavlou, P. A. and Venkatraman, N. (2013) 'Digital business strategy: toward a next generation of insights', *MIS Quarterly*, 37(2), pp. 471–482.

Carr, N. G. (2003) 'IT Doesn't Matter', *Harvard Business Review*, 81(5).

Chen, H., Chiang, R. H. L. and Storey, V. C. (2012) 'Business intelligence and analytics: from big data to big impact', *MIS Quarterly*, 36(4), pp. 1165–1188.

Cunningham, W. (1993) 'The WyCash portfolio management system', in *ACM SIGPLAN OOPS Messenger*, pp. 29–30. doi: 10.1145/157710.157715.

Drnevich, P. L. and Croson, D. C. (2013) 'Information technology and business-level strategy: toward an integrated theoretical perspective', *MIS Quarterly*, 37(2), pp. 482–509.

Ferguson, R., Phillips, M. and Sheard, S. (2014) 'Modeling Software Sustainment', *CrossTalk, The Journal of Defense Software Engineering*, 27(3), pp. 19–22.

Forrester, J. (1961) *Industrial Dynamics*. Productivity Press.

Franco, E. F., Rocha, J., Carvalho, H., Marcelo, M. and Hirama, K. (2016) 'An Analysis of Technical Debt Management Through Resources Allocation Policies in Software Maintenance Process', in *Proceedings of the 34th International Conference of the System Dynamics Society*. Delft, Netherlands. Available at: http://arxiv.org/abs/1609.06868.

Georgantzas, N. C. and Katsamakas, E. G. (2008) 'Information systems research with system dynamics', *System Dynamics Review*, 24(3), pp. 247–264. doi: 10.1002/sdr.420.

INCOSE (2015) *Systems Engineering Handbook: A Guide for System Life Cycle Processes and Activities*. 4th editio. Edited by D. D. Walden and G. J. Roedler.

ISO/IEC/IEEE 24765:2010 (2010) 'Systems and software engineering -- Vocabulary'. doi: 10.1109/IEEESTD.2010.5733835.

ISO/IEC 14764:2006 (2006) 'Software Engineering — Software Life Cycle Processes — Maintenance'.

ISO/IEC 25010:2011 (2011) 'Systems and software engineering — Systems and software Quality Requirements and Evaluation (SQuaRE) — System and software quality models'.

Jones, C. (2008) *Applied Software Measurement: Global Analysis of Productivity and Quality*. 3rd editio. McGraw-Hill Education.

Kellner, M. I., Madachy, R. J. and Raffo, D. M. (1999) 'Software process simulation modeling: Why? What? How?', *Journal of Systems and Software*, 46(2–3), pp. 91–105. doi: 10.1016/S0164-1212(99)00003-5.

Lehman, M. (1980) 'Programs, life cycles, and laws of software evolution', *Proceedings of the IEEE*, 68(9), pp. 1060–1076. doi: 10.1109/PROC.1980.11805.

Letouzey, J.-L. and Ilkiewicz, M. (2012) 'Managing Technical Debt with the SQALE Method', *IEEE Software*, 29(6), pp. 44–51. doi: 10.1109/MS.2012.129.

Lin, C. Y., Abdel-Hamid, T. and Sherif, J. S. (1997) 'Software-Engineering Process Simulation model (SEPS)', *Journal of Systems and Software*, 38(3), pp. 263–277. doi: 10.1016/S0164-1212(96)00156-2.

Melville, N., Kraemer, K. and Gurbaxani, V. (2004) 'Information technology and organizational performance: An integrative model of IT business value', *MIS quarterly*, 28(2), pp. 283–322.

Parnas, D. L. (1994) 'Software aging', in *Proceedings of 16th International Conference on Software Engineering*. IEEE Comput. Soc. Press, pp. 279–287. doi: 10.1109/ICSE.1994.296790.

Sauer, C. (1993) *Why Information Systems Fail: A Case Study Approach*. Oxfordshire, UK: Alfred Waller.

Sheard, S., Ferguson, R., Phillips, M. and Moore, A. (2014) 'Dynamics of Software Sustainment', *Journal of Aerospace Information Systems*, 11(10), pp. 691–701. doi: 10.2514/1.I010169.

Sterman, J. (2000) *Business Dynamics: Systems Thinking and Modeling for a Complex World*. McGraw-Hill/Irwin.

Waeselynck, H. and Pfahl, D. (1994) 'System Dynamics Applied to the Modeling of Software Projects', *Software-Concepts and Tools*, 15(4), pp. 162–176. Available at: http://www.mendeley.com/research/system-dynamics-applied-modeling-software-projects/ (Accessed: 11 November 2014).

Wernick, P. and Lehman, M. . (1999) 'Software process white box modelling for FEAST/1', *Journal of Systems and Software*, 46(2–3), pp. 193–201. doi: 10.1016/S0164-1212(99)00012-6.

Wiederhold, G. (2006) 'What is your software worth?', *Communications of the ACM*, 49(9), pp. 65–75. doi: 10.1145/1151030.1151031.

Yeo, K. T. (2002) 'Critical failure factors in information system projects', *International Journal of Project Management*, 20(3), pp. 241–246. doi: 10.1016/S0263-7863(01)00075-8.

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BOOK OF ABSTRACTS

Smart Model-based Governance: from Big-Data to future Policy Making

Stefano Armenia
Dipartimento di Ingegneria Informatica, Automatica e Gestionale, Sapienza University of Rome, Italy
e-mail: armenia@dis.uniroma1.it
Corresponding author

Eduardo Ferreira Franco
Department of Computer Engineering, University of São Paulo, Brazil
e-mail: eduardo.franco@usp.br

Massimo Mecella
Dipartimento di Ingegneria Informatica, Automatica e Gestionale, Sapienza University of Rome, Italy
e-mail: mecella@dis.uniroma1.it

Riccardo Onori
Business Process Management & Improvement (BPMI), Italy
e-mail: riccardo.onori@bpmi.it

Abstract

The dissemination of software systems in corporate environments is a reality, and some authors no longer consider them as a competitive advantage, but rather as commodities (Carr, 2003). Its mass diffusion made companies operational and managerial dependent on them (Melville, Kraemer and Gurbaxani, 2004). This phenomenon that has been accelerated by the increased competitiveness (Bharadwaj *et al*., 2013; Drnevich and Croson, 2013) and the increasing amount of information produced and consumed (Chen, Chiang and Storey, 2012).

Although the concept of governance has been widely discussed in the academia as well as in the public and private sectors over the last decades, there is still no consensus on its ultimate definition. Hufty (2011) argues that it is one of the fuzziest concept currently in use, sometimes referring to theoretical approaches and sometimes to ideological stances. However, Governance is not a recent

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fashion term. Some of its definitions emerged already back in the 1940s and, since then, it has been systematically used in distinct areas such as business organization, accounting, management, etc., and even into the IT. The diffusion of the concept of governance coincided with the emergence of a representation of society as an organized agglomerate of highly complex and functionally differentiated systems, and was accelerated by events like globalization, the spread of neo-liberalism, the crises of the welfare state, and socio-technological changes (Cajvaneanu, 2011).

In the 1990s, the term became widely used within the international development aid community. Worried about the weak results of their development agenda in the sub-Saharan Africa, the World Bank became aware of the fact that they were facing a problem of "governance," mainly caused by weak government commitments and poor management (World Bank, 1989). They defined governance as "the manner in which power is exercised in the management of a country's economic and social resources for development" (World Bank, 1992, p. 1). Hence, the term became commonly used in contexts related to how organizations (public or private) are directed, controlled and held accountable (ANAO, 1999).

In the following years, the debates on governance broadened to include not only what it strictly means, but also how "good governance" would be characterized and measured. In 1994, the World Bank stated:

> *Good governance is epitomized by predictable, open, and enlightened policymaking (that is, transparent process); a bureaucracy imbued with a professional ethos; an executive arm of government accountable for its actions; and a strong civil society participating in public affairs; and all behaving under the rule of law. (World Bank, 1994, p. vii)*

In the corporate context, Cadbury (1992) defined governance as "the system by which organizations are directed and controlled," this work became a seminal publication known as the "Cadbury Report" and provided the foundations for the OECD's "Principles of Corporate Governance" (OECD, 1999). These principles aimed at identifying common elements that lie at the roots of good corporate governance and could serve as an improvement tool. For the OECD (2015), corporate governance is not an "end" (or a goal) in itself, but rather a mean to create market confidence and business integrity that are essential for companies that need access to equity capital for long-term investment.

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Not only did the governance concept evolved and changed over the time, but also many technological and organizational innovations emerged over this period that helped to shape the governance's field and it's practices. For example: difference kinds of Management Information Systems (MIS) started to be mass deployed aiming to increase efficiency and to make information easily accessible; legal frameworks were created in many countries as a response to financial scandals, which sought to increase transparency and accountability in the corporate governance (for example, the Sarbane-Oxley[3]); different management theories emerged as a consequence of social transformations etc.

In general, most of the governance definitions refer to the decision-making process and the capacity to design, formulate and implement policies capable of achieving long-term strategic objectives as some of its core components. This is of course a hugely critical aspect, as still in many cases policies and strategies are developed based on personal experience, our bounded-rationality and inability to correctly anticipate how a system modified by our decisions will behave. Even some laws (Armenia et al., 2012) promulgated by countries that have a long history of governmental stability, democracy, etc. run the risk of being designed without taking into account every aspect intervening in the system and how the system gets modified (and will work from then onwards) by the policies once they get implemented. In other words, decisions are actions taken, by applying explicit and implicit policy rules from our mental-models, to particular conditions perceived about the world; clearly, the difference between good and poor decision-makers lies between the information gathering and action, how they select a small relevant fraction of all the available information and how they process it effectively (Forrester, 1992).

Unfortunately, when formulating and solving complex problems, the human mind is limited by the available information, its cognitive limitations, and the available time to take any decision; hence, it cannot achieve the ideal of "objective rationality" (make the most optimal decision possible, given the information available) and is destined to a lower level of the intended rationality (Simon, 1955). Consequently, the performance and success of an organization are governed primarily by the (…) limitations of its members and depend on the organizational setting within which decision making takes place (Morecroft, 1983).

[3] A United States act to protect investors by improving the accuracy and reliability of corporate disclosures made pursuant to the securities laws, and for other purposes.

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In this perspective, the higher and quicker availability of always better data management technologies have recently been determined as capable of contributing to soften the problem of the limited information available during decision-making by rendering cheaper and faster the activity of gathering and processing large amounts of data with reference to specific process and performance indicators (the Big Data paradigm). Although there is no standard definition for Big Data, it is possible to identify a consensus when its properties are considered: it handles massive amounts of various types of data and at a high speed, which is commonly referred as the 3V's properties – volume, variety, and velocity (Russom, 2011). Several techniques, technologies, practices and methodologies are already being used in each sub process related to data driven application, that comprehends transmission, capture, storage, curation, analysis, visualization, and interpretation, to improve decisions making (Chen, Chiang and Storey, 2012; Chen and Zhang, 2014; LaValle et al., 2014).

Due to our modern digital life, where so much of economic, social, and political life takes place digitally and leaves digital trails everywhere, Big Data has the potential to transform the mutual government-citizen understanding and relationship (Clarke and Margetts, 2014) into a process where information related to available services and how these services are used in exchanged continuously. This clearly plays an important role in the transition to the "Digital Era Governance" (DEG), where digital technologies are placed at the center of bureaucracy (Dunleavy, 2005). Moreover, Willis (2005) argues that a sound information and records management underpins, in a direct or indirect way, many of the vital aspects of the corporate governance, which was also reinforced by the Australian National Audit Office (ANAO):

When linked with information management more broadly, a sound recordkeeping can assist organizations' business performance by: a) better informing decisions; b) appropriately exploiting corporate knowledge; c) supporting collaborative approaches; and d) not wasting resources, for example by unnecessary searches for information and/or re-doing work. (ANAO, 2003, p. 11)

Although Big Data initiatives are currently presenting promising results (LaValle et al., 2011, 2014), there is still some skepticism about their real capabilities. Some authors argue that their contribution to prediction performance is still marginal (Junqué de Fortuny, Martens and Provost, 2013), as it is considered highly contextual dependent and that all the fuzz and claims to its objective and accuracy are somehow misleading (Boyd and Crawford, 2012). Also our assumption is that the

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approaches underlying the possibility to extract knowledge from big amount of data (both structured and unstructured) that are typical of the big-data approaches (i.e.: statistical-econometric and semantic in a first instance) are surely important to understand how a system has behaved until a certain point in time (and a lot of information can be derived/inferred from there), but they unfortunately (still) lack the capability to infer the system's behavior and its relationship with other systems (some of which might even have counterintuitive behaviors, like in the social area). Besides, some of the base assumptions for deriving new knowledge is that such data is not biased, which in certain (most) situations cannot be ensured. In other words, and with an obvious oversimplification statement, if a big-data approach is telling us that sales are growing at a certain rate over a specific time-window (Figure 2), concluding that such sales will keep on growing is a tremendously risky assumption for a sales policy eventually built on it later on!

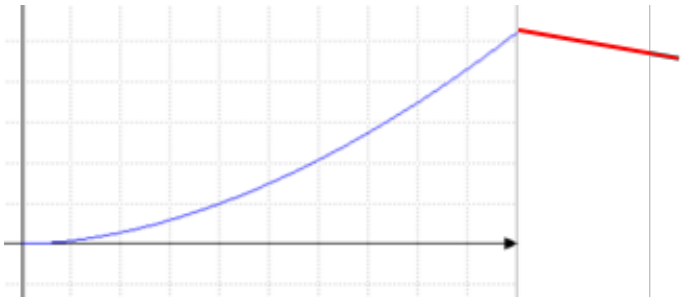

Figure 2 - Example of unpredictable behavior.

Schwaninger (2009) points out that the main problem is not related to the availability of data, but on the model that directs an inquiry for it. The challenge is in recognizing the important drivers on time and in articulating the need for relevant information. He mentioned that in the transformation of facts and data into information, lies the difference between what is relevant and what is irrelevant (as information involves an insight that may trigger a change). Knowledge implies insights and can be conceived of as action potential. When it is possible to transform knowledge into effective action, it is reached the point of understanding something. Wisdom is a higher quality of knowledge and understanding, which imply the ethical and aesthetic dimensions.

As the problems and challenges become more complex and interlinked, an integrated and systemic approach is thus necessary, especially in conjunction with the availability of increasingly sophisticated technological solution for extracting information from data. Many authors also argue that if

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people had a holistic view of the world, they would act in consonance with the long-term best interests of the system as a whole. As a direct consequence of this concept, over a few decades ago, the Systems Thinking approach, in other words the ability to see the world as a complex system where everything is connected, was proposed and developed. Sterman (1994, p. 297) described this approach as "a double-loop learning process in which we replace a reductionist, partial, narrow, short-term view of the world with a holistic, broad, long-term, dynamic view and then redesign our policies and institutions accordingly." Additionally, Schwaninger (2009) describes "the system approach" as a framework, based on system theory (science of the structure and behavior of organized wholes) and cybernetics (science of control and communication in complex dynamical systems), which provides a formal apparatus for dealing with complex systems of all kinds and from many fields and allows synergic interaction between different disciplines, thus increasing the possibility of innovative, transdisciplinary strategies to cope with complex issues. There are many schools of Systems Thinking, from qualitative modeling to formal and quantitative modeling. One example of how such approaches could help overcoming the bounded rationality and improve the learning process in complex settings as well as the related decision making process, is to combine them with modeling and simulation techniques. For example, Morecroft (1983) described System Dynamics, one of the main Systems Thinking methodologies, as a powerful approach capable of portraying the bounded rationality, as it implicit embodies it in its feedback model's structure, by using simulations for gaining insights in the decision-making process. System Dynamics models can be explained in terms of how they treat information flows and processing in decision-making rules for explaining how well-intentioned policies (intendedly rational) can lead to unintentional problematic behavior in a complex organizational setting.

However, several of the Systems Thinking techniques (including System Dynamics) still lack a standard notation for specifying model requirements, which are established during model conceptualization, and is considered one of the most important steps in the development of a simulation model (Luna-Reyes, 2003). For this purpose, several modeling notation languages have been proposed that could be used for facilitating the communication between different stakeholders during model conceptualization, the automation of model's structures and relationships identification from data mining and analysis, for example, Business Process Modeling Notation4 (BPMN) and System Modeling

[4] http://www.bpmn.org/

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Language5 (SysML). The Model-based approach, a paradigm that emphasizes the application of visual modeling principles and provides a rigorous means for capturing and integrating requirements, design, analysis, verification, assessment, and communication (Friedenthal, Moore and Stein, 2014), can thus be used as a bridge between the huge amount of data available and being produced and the Systems Thinking/System Dynamics approach for developing a new paradigm of decision making supporting tools.

The main objective of this work is to stimulate academics', practitioners' and industries' discussion around the proposition of a conceptual framework for a new holistic, integrated and systemic category of Decision Support Systems (DSS), the Smart Model-based Governance (SMbG). This conceptual framework ideally aggregates IT tools, standards and methodologies, capable of describing (inter-) organizational functions, services, structures, processes, etc. together with modeling & simulation methodologies (even used in a hybridized/integrated fashion) and technologies (also here are needed standards to allow interoperability of organizational models, like in the XMILE6 case) capable in turn of addressing strategic/vision/policy aspects in complex organizations and environments under a systemic umbrella approach (and here we argue that Systems Thinking might be an ideal tool also to stimulate organizational dialogue around a shared vision of the organization itself.

Smart Model-based Governance will certainly enable the usage of virtual simulation environments, where space and time can be compressed and slowed. Also, it will still make it possible to perform tests and experiments, that would often be economically unfeasible or unethical to explore in the real world, for evaluating the long-term side effects of decisions, speed learning, develop the understanding of complex systems, and design effective intervention policies (Sterman, 2000).

In other words, the SMbG approach tries to address how different and complimentary tools (namely Big Data, Systems Thinking, various Modeling and Simulation) could be combined to foster the achievement of good governance. It shall represent a new paradigm for decision-making and governance in the long-term horizon, as it could provide a complementary organizational learning loop for the well-established "double loop" learning model proposed by Argyris and Schön (1978). For them,

[5] http://www.omgsysml.org/

[6] https://www.oasis-open.org/committees/xmile/

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organizational learning involves the detection and correction of errors. When it permits the organization to carry on its present policies or achieve its present objectives, they called it "single-loop" learning. "Double-loop" learning occurs when errors are detected and corrected in ways that involve the modification of an organization's underlying norms, policies, and objectives.

In this paper, following the reasoning conducted so far, we argue that a third loop may exist, representing the changes caused by decisions taken to the real world and the information available (Big Data) that need to be treated, analyzed and interpreted to reframe our assumptions (mental-models) for improving the intervention and governance strategies (Figure 3).

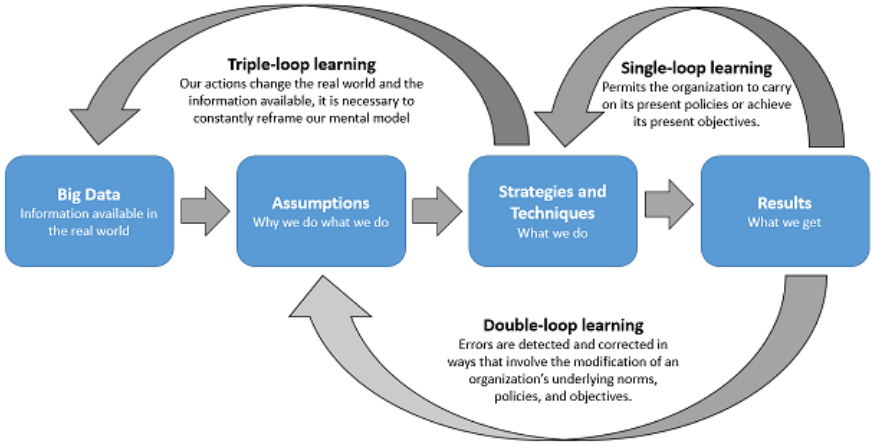

Figure 3 - Single, Double and Triple loop learning, adapted from Argyris and Schön (1978).

Keywords: Governance; Decision Making; System Thinking; Modeling & Simulation; Big data.

REFERENCES

ANAO (1999) *Corporate Governance in Commonwealth Authorities and Companies - Principles and Better Practices*. Canberra.

ANAO (2003) *Recordkeeping in Large Commonwealth Organisations (Report No.7 2003-04)*. Canberra. Available at: https://www.anao.gov.au/sites/g/files/net1661/f/anao_report_2003-2004_07.pdf.

Argyris, C. and Schön, D. A. (1978) *Organizational Learning: A Theory of Action Perspective*. Addison-Wesley.

Armenia, S., Centra, A., Cesarotti, V., Angelis, A. De and Retrosi, C. (2012) 'Military Workforce Dynamics and Planning in the Italian AirForce', in *Proceedings of the 30th International System Dynamics Conference*. St. Gallen, Switzerland.

Bharadwaj, A., El Sawy, O. A., Pavlou, P. A. and Venkatraman, N. (2013) 'Digital business strategy: toward a next generation of insights', *MIS Quarterly*, 37(2), pp. 471–482.

Boyd, D. and Crawford, K. (2012) 'CRITICAL QUESTIONS FOR BIG DATA', *Information, Communication & Society*, 15(5), pp. 662–679. doi: 10.1080/1369118X.2012.678878.

Cadbury, A. (1992) *The financial aspects of corporate governance*. London, UK. Available at: http://www.ecgi.org/codes/documents/cadbury.pdf.

Cajvaneanu, D. (2011) *A Genealogy of Government. On Governance, Transparency and Partnership in the European Union*. University of Trento.

Carr, N. G. (2003) 'IT Doesn't Matter', *Harvard Business Review*, 81(5).

Chen, H., Chiang, R. H. L. and Storey, V. C. (2012) 'Business intelligence and analytics: from big data to big impact', *MIS Quarterly*, 36(4), pp. 1165–1188.

Chen, P. and Zhang, C.-Y. (2014) 'Data-intensive applications, challenges, techniques and technologies: A survey on Big Data', *Information Sciences*, 275, pp. 314–347. doi: 10.1016/j.ins.2014.01.015.

Clarke, A. and Margetts, H. (2014) 'Governments and Citizens Getting to Know Each Other? Open, Closed, and Big Data in Public Management Reform', *Policy & Internet*, 6(4), pp. 393–417. doi: 10.1002/1944-2866.POI377.

Drnevich, P. L. and Croson, D. C. (2013) 'Information technology and business-level strategy: toward an integrated theoretical perspective', *MIS Quarterly*, 37(2), pp. 482–509.

Dunleavy, P. (2005) 'New Public Management Is Dead--Long Live Digital-Era Governance', *Journal of Public Administration Research and Theory*, 16(3), pp. 467–494. doi: 10.1093/jopart/mui057.

Forrester, J. W. (1992) 'Policies, decisions and information sources for modeling', *European Journal of Operational Research*, 59(1), pp. 42–63. doi: 10.1016/0377-2217(92)90006-U.

Friedenthal, S., Moore, A. and Stein, R. (2014) *A Practical Guide to SysML: The Systems Modeling Language*. 3rd editio. Morgan Kaufmann.

Hufty, M. (2011) 'Governance: Exploring Four Approaches and Their Relevance to Research', in Wiesmann, U. and Hurni, H. (eds) *Research for Sustainable Development: Foundations, Experiences, and Perspectives*. Bern, Switzerland: NCCR North-South, Centre for Development and Environment (CDE) and Instiute of Geography, University of Bern, pp. 165–183.

Junqué de Fortuny, E., Martens, D. and Provost, F. (2013) 'Predictive Modeling With Big Data: Is Bigger Really Better ?', *Big Data*, 1(4), pp. 215–226. doi: 10.1089/big.2013.0037.

LaValle, S., Hopkins, M. S., Lesser, E., Shockley, R. and Kruschwitz, N. (2014) 'Analytics: The new path to value', *MIT Sloan Management Review*, 52(1), pp. 1–25.

LaValle, S., Lesser, E., Shockley, R., Hopkins, M. S. and Kruschwitz, N. (2011) 'Big Data, Analytics

and the Path From Insights to Value', *MIT Sloan Management Review*, 52(2), pp. 21–31.

Luna-Reyes, L. F. (2003) 'Model conceptualization: a critical review', in *21st International Conference of the System Dynamics Society*.

Melville, N., Kraemer, K. and Gurbaxani, V. (2004) 'Information technology and organizational performance: An integrative model of IT business value', *MIS quarterly*, 28(2), pp. 283–322.

Morecroft, J. D. (1983) 'System dynamics: Portraying bounded rationality', *Omega*, 11(2), pp. 131–142. doi: 10.1016/0305-0483(83)90002-6.

OECD (1999) *OECD Principles of Corporate Governance*. Available at: http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=C/MIN(99)6&docLanguage=En.

OECD (2015) *G20/OECD Principles of Corporate Governance 2015*. OECD Publishing. doi: 10.1787/9789264236882-en.

Russom, P. (2011) 'Big data analytics', in *TDWI Best Practices Report, Fourth Quarter*. The Data Warehousing Institute (TDWI), pp. 1–35.

Schwaninger, M. (2009) *Intelligent Organizations - Powerful Models for Systemic Management*. Berlin, Heidelberg: Springer-Verlag Berlin Heidelberg. doi: 10.1007/978-3-540-85162-2.

Simon, H. A. (1955) 'A Behavioral Model of Rational Choice', *The Quarterly Journal of Economics*, 69(1), pp. 99–118.

Sterman, J. (1994) 'Learning in and about complex systems', *System Dynamics Review*, 10(2–3), pp. 291–330. doi: 10.1002/sdr.4260100214.

Sterman, J. (2000) *Business Dynamics: Systems Thinking and Modeling for a Complex World*. McGraw-Hill/Irwin.

Willis, A. (2005) 'Corporate governance and management of information and records', *Records Management Journal*, 15(2), pp. 86–97. doi: 10.1108/09565690510614238.

World Bank (1989) *From crisis to sustainable growth - sub Saharan Africa : a long-term perspective study*. Washington, D.C. Available at: http://documents.worldbank.org/curated/en/498241468742846138/From-crisis-to-sustainable-growth-sub-Saharan-Africa-a-long-term-perspective-study.

World Bank (1992) *Governance and Development*. Washington, D.C. Available at: http://documents.worldbank.org/curated/pt/604951468739447676/pdf/multi-page.pdf.

World Bank (1994) *Governance - the World Bank's experience*. Whashington, D.C. Available at: http://documents.worldbank.org/curated/pt/711471468765285964/pdf/multi0page.pdf.

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BOOK OF ABSTRACTS

Mechanisms of meme propagation in the mediasphere: a simple system dynamics model

Ugo Bardi
Department of Chemistry, University of Florence, Italy.
e-mail: ugo.bardi@unifi.it
Corresponding author

Sara Falsini
Consorzio Interuniversitario per la Scienza e la Tecnologia dei Materiali (INSTM), University of Florence, Italy.
e-mail: sara.falsini@unifi.it

Ilaria Perissi
Consorzio Interuniversitario per la Scienza e la Tecnologia dei Materiali (INSTM), University of Florence, Italy.
e-mail: ilaria.perissi@unifi.it

Abstract

As defined by Dawkin (Dawkins Richard 1989) a meme is any cultural entity that exhibits self-replication. In particular, this concept applies to human thoughts and ideas transmitted from person to person via social interactions. In the age of the Internet, memes have the ability to spread around the world in very short periods of time and Wang et al. (Wang and Wood 2011) developed 'a viral memetic model' inspired by the well-known epidemiologic model of infectious diseases ("sane-infected-recovered", SIR). They found that such model matches the trend of many historical Internet search data.

However, the story may be more complicated than this if we consider the details of the propagation mechanisms. Memes are often said to diffuse by "going viral"; which implies pairwise interactions between agents acting as nodes of the network. Another possibility, however, is spreading by means of mass media sources; journals, TV, Web channels, and others. While infection starts from a single point and propagates across the sane with the SIR dynamic, the Mass media are "scattershot" sources and they can plant memes in many susceptible receptors simultaneously. To maintain the disease

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metaphor, for a meme, going viral is the equivalent of the flu epidemics. Instead, to be diffused by the media is the equivalent of mass poisoning by a radioactive cloud.

The system dynamics description of these two mechanisms is slightly different, even though both show a sharp spike of infected people at the beginning of the diffusion phase. Using system dynamics, it is possible to determine if a meme has been diffusing virally or if it has been planted by the mass media, possibly with hidden political or commercial purposes. The available data, mainly from Google Trends, show that both kinds of meme dissemination can be observed.

Keywords: meme, SIR, system dynamic.

REFERENCES

Dawkins Richard, 1941-. 1989. *Selfish Gene*.

Wang, Lin and Brendan C. Wood. 2011. "An Epidemiological Approach to Model the Viral Propagation of Memes." *Applied Mathematical Modelling* 35(11):5442–47. Retrieved (http://dx.doi.org/10.1016/j.apm.2011.04.035).

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Interorganizational Collaboration Dynamics

Edmundo Ortiz Romero, Ph.D. Candidate
Founder and General Director, Arkansas State University—Campus Querétaro, México
e-mail: edmundo_ortiz@yahoo.com
Corresponding author

Margarita Castro González, MBA
Research Associate, Arkansas State University—Campus Querétaro, México
e-mail: mcastro_ua@hotmail.com

Ignacio J. Martinez-Moyano, Ph.D.
Computational Social Scientist, Global Security Sciences, Argonne National Laboratory, US
Senior Fellow, Computation Institute, University of Chicago, US
e-mail: imartinez@anl.gov | martinez-moyano@uchicago.edu

Abstract

Interorganizational collaboration and punctuated economic development have been discussed at length in the literature (see Rosenstein-Rodan, 1961; Leontief, 1966; Forrester, 1969; Aumann and Schelling, 1981; Romer, 1986; Murphy, Shleifer, and Vishny, 1989; Krugman, 1991; Matsuyama, 1992; and Wei-Dong and Lawrence, 2011).

In order to explore the dynamic drivers of interorganizational collaboration and punctuated economic development in the context of the development of a sustainable learning community, we model the development of a new University Campus in Central Mexico as a means to detonate sustainable growth in the region. At its core, the project is based on interacting theories of punctuated economic growth, regional development, and interorganizational collaboration. We use the System Dynamics approach in the development of the model described here (Forrester 1961, Sterman 2000, Martinez-Moyano and Richardson 2013). In Figure 1 we show three core feedback mechanisms for sustainable growth in a region as identified in the process of creating a new University Campus in Central Mexico. First, R1—the employment-based growth loop—describes how immigration increases as a function of the attractiveness of jobs created in the region. As population grows, more services are

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needed and eventually provided. The growth in services creates an increase in employment levels in the region making it more attractive than the surrounding regions. Second, as services for the population are created (i.e., businesses and industry are established), the level of attractiveness of the area increases further influencing immigration and population levels (see R2—the services-based growth loop in Figure 1). Third, as the population level increases, the need for additional infrastructure rises influencing the willingness to invest in infrastructure which, after a delay, turns into actual investment in infrastructure further creating employment and adding to the overall attractiveness of the area. As infrastructure materializes in the region, increasing the region's infrastructure-based attractiveness, immigration levels increase making overall population grow (see R3—the infrastructure-based growth loop in Figure 1). Additionally, the development of new infrastructure creates different types of employment opportunities including short-term, long-term, temporary, and permanent employment (e.g., construction, maintenance, operation, etc.) which further increases the number and types of services that are needed and created. The existence of infrastructure development increases the gain of R1 and R2 as more services are developed and more employment is created in the region.

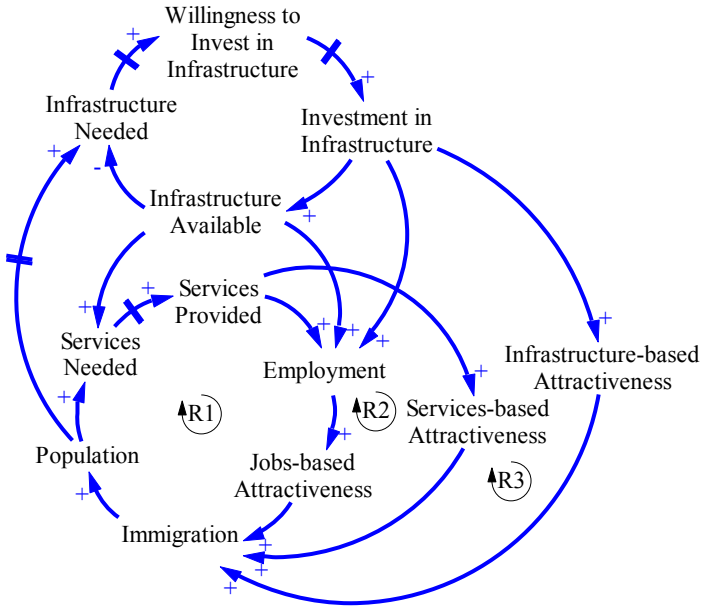

Figure 1. Three growth mechanisms

The attractiveness generated via jobs creation, services generation, and infrastructure development increases the likelihood of building consensus among key stakeholders (government,

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industry, population, academia, etc.) for the development of the region. As consensus related to the development of the region is built, interorganizational collaboration emerges and consolidates over time allowing for the creation of a shared vision for the region. Shared vision alignment, created by investing effort in generating a shared vision for the region, will influence the willingness to invest in infrastructure for the region closing a positive feedback mechanism of vision building and infrastructure creation (see Figure 2, R4—the overall-attractiveness-breeds-investments loop). R4 in Figure 2 is more than one single feedback process as it feeds from, and accelerates, other growth mechanisms in the model (i.e., R1, R2, and R3).

Using the model of interorganizational collaboration, specific analyses of possible unanticipated consequences of policy implementation will be conducted. The model captures the process followed to initiate, by building a University Campus in Central Mexico, the development of a region in Central Mexico. Additionally, the model will be used as a virtual laboratory to investigate the impact of strategic initiatives at a regional level and to examine how to replicate interorganizational collaboration and punctuated economic development processes in other regions.

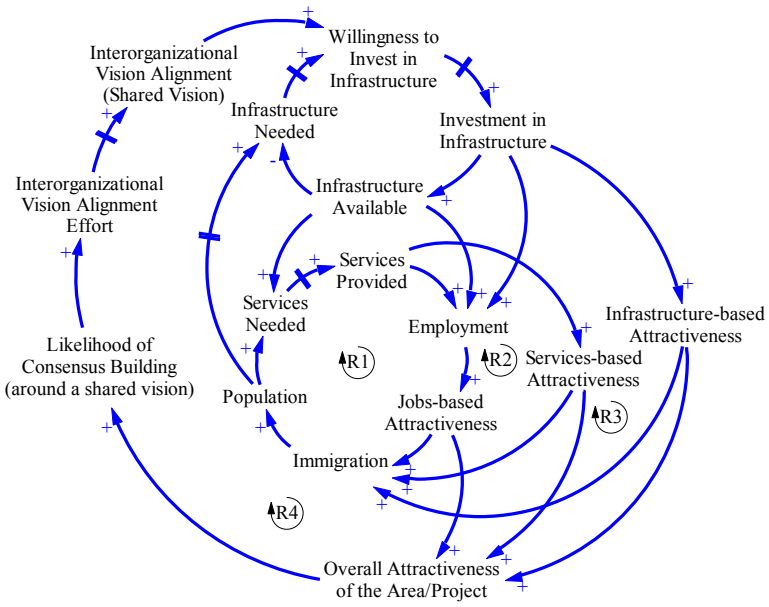

Figure 2. Vision alignment and growth

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Keywords: interorganizational collaboration, system dynamics, regional development

REFERENCES

Forrester, J. W., (1961) *Industrial Dynamics*. Cambridge MA: Productivity Press.

Forrester, J. W., (1969) *Urban dynamics*. Cambridge MA: MIT press.

Hart, S. (2006) Robert Aumann's Game and Economic Theory, *Scandinavian Journal of Economics*, 108 (2) 185–211.

Krugman, P. R. (1991) *Geography and trade*. MIT press.

Leontief, W. (1987) *Input-output analysis*, The New Palgrave. A Dictionary of Economics, (2) 860–864.

Martinez-Moyano, I. J., Richardson, G.P. (2013) Best Practices in System Dynamics Modeling. *System Dynamics Review,* 29 (2):102-123.

Matsuyama, K. (1992) Agricultural productivity, comparative advantage, and economic growth. *Journal of economic theory*, 58(2), 317-334.

Murphy, K. M., Shleifer, A., Vishny, R. W. (1988). *Industrialization and the big push*.

Richmond, B. (1987) *Systems thinking: Four key questions*. High Performance Systems

Rosenstein-Rodan, P. N. (1961) *Notes on the theory of the 'big push'*. In Economic Development for Latin America (57-81). Palgrave Macmillan UK.

Romer, P. M. (1986) Increasing returns and long-run growth. *The journal of political economy*, 1002-1037.

Sterman, J.D. (2000) *Business Dynamics: Systems Thinking and Modeling for a Complex World*. Boston, MA: Irwin McGraw-Hill.

Wei-Dong, S., Lawrence, W. (2011) Research on Sustainable Development Issue in the Vision of Game Theory. *Global Journal of Management and Business Research* 11 (3) 49 – 53

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MANAGING CHANGING ORGANIZATION PROCESS: SYSTEM DYNAMICS MODELING TOWARDS LEARNING ORGANIZATION

Habib Sedehi
Senior ICT Consultant – Rome, Italy
habibsedehi@gmail.com

Abstract

Henry Mintzberg, one of the founders of the modern organization theory, has studied the coordination mechanisms and planning parameters for an enterprise related to the organization context, basing his research mainly on the deductive analysis. Some years later, Peter Senge, author of "The fifth discipline", through the concept of the Learning Organization has created the necessary conditions to establish the dynamics of an organization, which will have to be sustainable in time through the System Thinking approach. But, during these times of globalization and continuous increasing complexity, how an organization process can be "best" managed in order to be competitive and adapted to fast and continuous changes of its environment?

The paper draws the cognitive infrastructure and sets the standard for an ambitious research project, addressed to the development of an innovative system dynamics modeling approach to support a general organizational change design. System Dynamics (SD) methodology has been chosen for analyzing and creating a "meta" model, which aims to design and develop the five disciplines defined by Senge regarding the creation of a Learning Organization (LO), by activating some key policy levers, which partially have been pointed out by Mintzberg in his five organizing models.

Considering Mintzberg's organizing analysis model from starting point and the Learning Organization concept as arrival end, the research aims to design the "ideal" organizational path of a "dynamic" enterprise well disposed to environmental changing management: an inner incremental and constant process of organizing innovation, where the most important value is the connection with the company identity and the right balancing of organizing planning, by selecting and evaluating suitable planning parameters, while considering the operating company environment.

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The development modeling process results as a Darwin-based activity, pointing out to the learning-knowledge based company behavior.

The strength of the Learning Organization is the ability of interweaving business and process skills, cooperative models (how people interact inside and outside) and company knowledge management models.

With this view, it is clear that the value chain is naturally redistributed and in a way there is no more difference between company and customers: this means that when stockholders, of different functions/direction, take part in a process they should share knowledge and collaborate with each other in order to "best" manage changes and work effectively.

It is not always possible to have a system adapting to all contexts - situations and companies, in order to tend to become a LO. However, it can be identified some common points, which a learning-oriented company should follow. Organizing policy strategies have to:

- involve the customer needs and satisfaction → Network Company,
- connect the knowledge and the technology → IT Platforms,
- have broad learning techniques and be able to stimulate resources in order to make them create and share more knowledge → Knowledge Management,
- establish a new psychological contract with human resources in order to develop strategic plans to manage intellectual capital → Psychological Contract.

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Through the concept of LO, companies can identify an innovative development method, based on the ability of combining "know-how", related to company history and experience, with "have-got-to", referring to the needs associated with success in a fast-growth market.

Every organizing model has some means, which can be used to increase the development of a Learning Organization, by acting on relationships and strengthening causal and positive loops, whose goal is to reduce the Gap with the LO.

Every organization, without considering Mintzberg's five models, can also be analyzed following this process: identifying main relationships, studying its influence on strategic variables in the LO and planning parameters and coordination mechanisms.

The SD Methodology can be very helpful in such type of policy analysis. Thanks to its applications both in management and organization fields SD provides methodology for representing and studying company processes. SD models are equivalent to company systems (isomorphism between system and company), as there is a logical analogy between SD models and company structure elements (Stock and Flow analysis).

In conclusion, starting with the above considerations, the research aims to set the principals for the development of a SD modeling analysis, which its final goal is to detect, on the base of specific organization structure (configuration), how an enterprise should manage the changing organization in order to tend, as close as possible, towards a Learning Organization. As it can be imagined, this ambitious goal fits in a high level scientific challenge, imposing the planning of an extensive research project and requiring significant human and financial resources.

Keywords: Changing Organization Management, System Dynamics Modeling, Policy Analysis, Mintzberg

REFERENCES

Cinti, Patrizia; "*Tecniche di sviluppo e valorizzazione delle competenze*"; Course notes, Communication Sciences Department , Rome "La Sapienza". University (2009).

ISBN: 9788890824258

Floreani, Alberto; Enterprise risk management, *I rischi aziendali e il processo di risk management*; ISU Università Cattolica, (2005).

Fontana, Renato; Course notes; "*Sistemi organizzativi complessi*"; Communication Sciences Department , Rome "La Sapienza". University (2008).

Piccardo & Benozzo; *Etnografia Organizzativa*, Hoepli, (1996).

Maani, Kambiz E., Cavana, Robert Y.; Systems Thinking and Modelling, *Understanding Change and complexity* ; Prentice Hall (2000).

Minati, Gianfranco; *Teoria Generale dei Sistemi, Sistemica, Emergenza: un'introduzione*; Polimetrica (2004).

Mintzberg, Henry; *La progettazione dell'organizzazione aziendale*, Il Mulino (1996).

Morecroft John; Strategic Modelling and Business Dynanics, *A feedback system approach*; Wiley (2007).

RFI news*; Risk Management e Control Risk Self Assessment in RFI*; Intranet del Gruppo Ferrovie dello Stato (2007).

Rullani, Enzo; *Economia della Conoscenza, Creatività e valore nel capitalismo delle reti*; Carocci (2004).

Sedehi, Habib; Course notes; "*Laboratorio di Modelli di simulazione dei processi d'Impresa*" Communication Sciences Department , Rome "La Sapienza". University (2009).

Senge, Peter M. ; The Fifth Discipline; *The Art & Practice of the Learning Organization*; Currency Doubleday (2006).

Sterman, John D.; Business Dynamics, *System Thinking and Modelling for a Complex World*;Irwin McGraw-Hill (2000).

Toni, Marco; M.A. Thesis; "*La gestione sistemica del cambiamento Organizzativo - Il caso Trenitalia*"; Communication Sciences Department , Rome "La Sapienza". University (2009).

Von Bertalanfy, Ludwig; *Teoria Generale dei Sistemi, Fondamenti, sviluppo, applicazioni*; Mondadori (1983).

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BOOK OF ABSTRACTS

Governance of Smart Clusters; the role of Proximity in Model-Based Governance

Nathalie Lachapelle
Professor at the Business School, Téluq, University of Québec, Canada
e-mail: nathalie.lachapelle@teluq.ca
Corresponding author

Diane-Gabrielle Tremblay
Professor at the Business School, Téluq, University of Québec, Canada
e-mail: dgtrembl@teluq.ca

Abstract

Theories on regional specialization, agglomeration and clustering have in a certain way existed for quite some time, over one hundred years if we go back to the Marshallian district (Marshall 1889) also adressed by Grant (1996), Bahlmann and Huysman (2008). However, they seem to have been rediscovered in recent years, amongst other to analyze the evolution of IT and other smart clusters. Some consider that the cluster theory re-emergence can be attributed to work done by Porter (1990, 2003), while others attribute this re-emergence to interest in the industrial districts and in what have been called "innovative milieux" in the French and Swiss literature. From there on, many governments and public policy organizations were very interested in the concept of clusters and many adopted it as a public policy instrument in order to increase local and regional and national competitiveness, innovation, and growth (OECD 1999, 2001).

This interest is largely due to the importance of innovation and creative capacity, which are seen as fundamental factors in the development of smart clusters (IT, multimedia and others- Tremblay, 2016) in the knowledge economy and also in economic and social institutional context (Lundvall and Maskell, 2000). Over recent decades, theories on innovation systems and smart clusters have put forward the idea that the territory and proximity (Bocquet and Mothe, 2015) are important in shaping innovative and creative capacities.

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In our paper, we start by defining the concepts of clusters, industrial districts, local systems of production, "innovative milieux", and we look into the links between these concepts, learning and smart organizations. While the industrial districts theory stresses the importance of skills, cluster theory is more centred on governance processes, innovation or performance outcomes, while including skills and competencies among the factors contributing to firms' performance. Over recent years, cluster theory has highlighted the following findings (Tremblay, 2014):

- Cluster development is a long-term process and is based on the mobilization of key stakeholders in the community, local or regional territory.

- One of the main functions of clusters is to furnish human capital and social capital, as well as financial capital and resources, in order to support firms that are part of the cluster.

- It is through interactions that representations and ideas are exchanged and knowledge is developed, and this supports firms and entrepreneurs in a given cluster (Florida, 2004; Ketels 2003; 2004; Julien 2005; Stolarick *et al*.; 2005; Wolfe and Lucas, 2004; 2005).

- Local buzz and global pipelines both contribute to knowledge creation and smart organizations, although this is object of debate (the importance of local versus global sources).

The cluster literature highlights the importance of information, knowledge and interaction in order to develop smart organizations. When information is rich (especially implicit or tacit information, rather than explicit codified knowledge), interrelation and exchange can offer an excellent way to transfer this information to various actors (Julien, 2005; Tremblay, 2014; 2015). This facilitates production of meaning, since knowledge is shared in a more or less diffuse way. In this context, the cluster is seen as a very efficient mode of access to interpretation of information and to learning (Tremblay, 2016).

The main difference between the cluster view and other views of business development or growth is the fact that the cluster view highlights the social and territorial nature of the innovation process, what we have called elsewhere "socio-territorial capital" (Lundvall and Maskell, 2000; Tremblay, Klein and Fontan, 2016), which is seen as playing as important a role as the economic

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or financial factors (price factors, financial support, and so on). The territory is seen here as being more than a simple repository for economic activity and the role of social relations of production and interactions is highlighted.

Our paper will address governance issues and highlight the fact that governance processes are the institutional bases of smart cluster development. For many authors, governance can be seen as the central concept which brings together many dimensions of cluster analyses (Tremblay, 2016; Wolfe and Lucas, 2005, 2004). Governance processes and modes are seen as the source of information flows, as the places where public and private actors can be brought together to design and support smart cluster development. There are various forms of governance, but partnership-based or joint governance appears to be the most promising from the point of view of skills development and innovation. Indeed, the plurality of actors brought together in this context would favour a more diverse knowledge base, and thus a richer learning process. Intermediary organizations play an important role here.

We will discuss the issue of proximity, because the basis of the cluster literature is that proximity matters in developing knowledge exchanges and innovation. Actors looking for solutions proceed by trial and error and these processes are all the more likely to produce solutions as they are conducted in a spatial reference at various levels (local, regional, national). The principal vehicle of this learning can be physical proximity, which allows multiple contacts (Colletis and Pecqueur 1993; Bocquet and Mothe, 2015), while other forms of proximity (organizational, relational, and institutional) can be as important (Tremblay, 2014; 2016). Beyond proximity, trust between the various actors is important in order to develop interactions and knowledge.

Over the years, the cluster literature has stressed the fact that depending on the sector of activity, what authors have referred to as “local buzz” (local activity and interactions) and global pipelines of information and knowledge flows will have more or less importance. In science based sectors in particular, global knowledge flows are extremely important, while in more traditional clusters such as clothing, leather and ceramics, they may be less so.

Our paper will present a model of these governance and collaborative processes, including the various actors, i.e. firms, cities, intermediary organizations, clusters, universities and other

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sources of knowledge, etc. It will also highlight the main processes of collaboration and the role of the relational proximity of actors in developing this collaboration in smart clusters, such as IT and multimedia clusters for example. It will also include the obstacles and the factors favoring collaboration, learning and innovation in smart clusters.

In particular, the approach taken in this presentation makes use of the qualitative principles of system dynamics (SD) (Luna-Reyes and Andersen, 2003) to represent the feedback loops involved in knowledge management and knowledge transfer within cluster governance for product creation and innovation. The syntax of the SD approach to depict reinforcing or balancing feedback loop representations (Senge, 1990), is applied as a system thinking (ST) research method in this work. The outcome from the proposed representation can be viewed as a dynamic hypothesis (DH) (Sterman, 2000) which allows for the examination and interpretation of the complex system of knowledge management of creative capacities and innovation.

Many studies have also insisted on the fact that policy makers should give a higher priority to the role of knowledge creation and innovation development as a source of competitive advantage (Evers, 2011; Damanpour and Aravind, 2012).

Keywords: Governance, proximity, organizations, smart, business, cooperation, collaboration, System Thinkings.

REFERENCES

Bahlmann, M., Huysman, M. 2008. The emergence of a knowledge-based view of clusters and its implications for cluster governance. *The Information Society*, 24(5): 204-318.

Bocquet, R., Mothe, C. 2015. Le rôle de la gouvernance des clusters dans les capacités dynamiques d'absorption des PME. *Management international/International Management/Gestiòn Internacional*, 19(2): 171-188.

Colletis, G., Pecqueur, B. 1993. Intégration des espaces et quasi intégration des firmes: vers de nouvelles rencontres productives ? *Revue d'économie régionale et urbaine* 3: 489-508.

Damanpour, F., Aravind, D. 2012. Managerial innovation: Conceptions, processes, and antecedents. *Management and Organization Review*, 8(2): 423–454.

ISBN: 9788890824258

Evers, N. 2011. International new ventures in «low tech» sectors: A dynamic capabilities perspective. *Journal of Small Business and Enterprise development*, 18(3): 502-528.

Florida, R. 2005. *The Flight of the Creative Class: The New Global Competition for Talent*. New York: Harper Business.

_____. 2004. The great creative class debate: Revenge of the squelchers. *Disposable Cities* 5 (July) 9. http://www.americancity.org/print_version.php

Grant, R. 1996. Prospering in dynamically-competitive environments: organizational capability as knowledge integration. *Organization Science*. 7(4): 375-387

Julien, P.-A. 2005. *Entrepreneuriat régional et économie de la connaissance*. *Une métaphore des romans policiers*. Québec: Presses de l'université du Québec.

Kettels, C.H.M. 2004. European clusters. *Structural Change in Europe 3*. *Innovative City and Business Regions*. Boston, MA: Hagbarth Publications, Harvard. http://www.isc.hbs.edu/pdf/Ketels_European_Clusters_2004.pdf

Ketels, C.H.M. 2003. The Development of the cluster concept – present experiences and further developments. Paper presented at the NRW conference on clusters, Duisburg, Germany December 5 http://www.isc.hbs.edu/pdf/Frontiers_of_Cluster_Research_2003.11.23.pdf

Luna-Reyes, L.F., and Andersen DL. (2003). Collecting and analyzing qualitative data for system dynamics: methods and models. *System Dynamics Review*. 19(4): 271–296.

Lundvall, B.-Å., Maskell, P. 2000. Nation States and Economic Development: From National Systems of Production to National Systems of Knowledge Creation and Learning', in G.L Clark, M.P Feldman, M.S Gertler (eds), *The Oxford handbook of economic geography*, Oxford University Press, Oxford, England; New York. pp. 353-72.

Marshall, A. 1889. *Principles of Economics*. London: Royal Economic Society.

OECD. 2001. *Innovative Clusters: Drivers of National Innovation Systems*. Paris: Organisation for Economic Cooperation and Development.

OECD. 1999. *Boosting Innovation: the Cluster Approach*. Paris: Organisation for Economic Cooperation and Development.

Pecqueur, B. 2001. Gouvernance et régulation: un retour sur la nature du territoire. *Géographie, économie, société*. 3: 229-45.

Porter, M. E. 1990. *The Competitive Advantage of Nations*. New York:The Free Press.

Porter, M. E. 2003. The economic performance of regions. *Regional Studies*. 37 (6-7): 549-78.

ISBN: 9788890824258

Senge, P. M. (1990). *The Fifth Discipline: The Art and Practice of the Learning Organization*. New York: Doubleday.

Sterman, J.D. (2000). *Business Dynamics: Systems Thinking and Modeling for a Complex World*. New York, N.Y: McGraw-Hill Higher Education.

Stolarick, K., Florida, R. and Musante, L. 2005. *Montréal, ville de convergences créatives: perspectives et possibilities*. Research report. Catalytix. http://www.culturemontreal.ca/pdf/050127_catalytix_fr.pdf.

Tremblay, D.-G. 2016. Innovation in the IT Sector : Intermediary Organizations as a Knowledge Sharing Strategy? *International Journal of Knowledge-Based Development* 7(4) . http://www.inderscience.com/jhome.php?jcode=ijkbd

Tremblay, D.-G. 2014. *L'innovation technologique, organisationnelle et sociale.* Québec : Presses de l'université du Québec.

Tremblay, D.-G. 2002. Informal learning communities in the knowledge economy; 'knowing whom' as a source of knowledge development in the multimedia sector." In *TelE-Learning: the Challenge for the Third Millenium*, edited by D. Passey and M. Kendall. Proceedings of the 17th World Computer Congress. Amsterdam/New York: Kluwer Academic Publishers.

Tremblay, D.-G., Klein, J.L. and Fontan, J.-M. 2016. *Initiatives locales et développement socioterritorial*. Québec : Presses de l'université du Québec. 370 p. http://puq.ca/catalogue/livres/initiatives-locales-developpement-socioterritorial-1737.html

Wolfe, D., Davis, C., and Lucas, M. 2005. Global networks and local linkages: An introduction. *Global Networks and Local Linkages*. Montreal: McGill-Queen's University Press.

Wolfe, D. and Lucas, M. 2004. Clusters in a Cold Climate. Innovation Dynamics in a Diverse Economy. Montreal: McGill-Queen's University Press.

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Sardinian dairy sheep supply chain: opportunities from a big data platform described with a causal loop diagram.

Alberto Stanislao Atzori
Assistant Professor of Animal Science Department of Agriculture, University of Sassari, Sassari, Sardinia Italy.
e-mail: asatzori@uniss.it Corresponding author

Luca Saba
PhD student of Animal Science, Department of Agriculture, University of Sassari, Sassari, Sardinia Italy.
e-mail: luca.saba@coldiretti.it

Giuseppe Pulina
Full professor of Animal Science, Department of Agriculture, University of Sassari, Sassari, Sardinia Italy.
e-mail: gpulina@uniss.it

Abstract

Dairy sheep supply chain in Sardinia involves about 10.000 dairy farms that raises about 3 million sheep in flocks that ranges from 100 to 2000 milking ewes per farm (Laore, 2013; BDN, 2016). The animal feeding is often based on mixed systems with large use of natural pastures and cultivated grasslands and integration of concentrate mix. The supply chain produces approximately 300 million liters of sheep milk that are mainly processed in cheese factories to produce Pecorino Romano cheese . The processing plants are owned by a small number of private companies (that shares about 60% of the milk processing), and a large number of cooperatives plants (that share the remaining part of the processing of the primary product deliveries). The amount of produced cheese (60% of the Italian total sheep cheese, about 35 kg of cheese per capita in respect to Sardinia population; Atzori et al., 2016) is mainly destined to international trades (Ismea – Laore, 2016). The high volatility of the cheese price in the international trade, causes great uncertainty in the milk price at producers. At regional level milk price is usually related to the stocks of Pecorino Romano cheese available in the processing

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plants, on annual basis. Poor transparency on cheese stocks and poor predictions of milk deliveries often generates unintended consequences and unexpected market dynamics with high speculation risks on the milk and cheese price. A causal diagram was built on Vensim®, using system thinking notation (Sterman, 2000), to explain the complex relationships among the stakeholders of the Sardinian sheep supply chain. The diagram shows how the price of the Pecorino Romano cheese in the international trade affects the management of the cheese stocks in the classical offer demand equilibrium. In addition, it shows how the milk price at producers influences the following production campaign. Milk constitutes about 80% of revenues in dairy sheep farms (Atzori et al., 2016). Farmers use the milk price as main indicator of profitability of the farm production process and it largely affects the decision-making process of the shepherds. In fact, with higher milk prices, farmers usually decide: - to buy more concentrate integration to reach higher milk yields; - to raise more young females to further increase the flock size. Those relationships are explained with the "farmer reinforcing loop" how milk price drives increases of production processes and farm size. On the other hand, produced milk affects milk deliveries and cheese stocks driving a balancing regional equilibrium of the milk price. In particular, the diagram shows how lacks of information regarding the flows of milk deliveries to the processing plants and ambiguous data on the cheese stocks, pushes uncertainty and limit the planning of robust, synergic and transparent policies. Uncertainty inspires the design of speculative strategies, which in turn generate abrupt oscillation of the milk price acting as balancing loop dependent from the cheese perceived stocks. The permanence of this condition will determine a general poor development of the dairy sheep sector and pronounced inequality in the profit redistribution among the actors of the supply chain as expected future behavior. In addition, uncertainty in the production sector also negatively affects the successfulness of the governmental polices aimed at increasing the animal welfare and milk quality. Those polices are mainly based on the use of the milk quality (i.e. milk somatic cell counts) as indicator of animal welfare because are highly associated with the health status of the animal. The animal welfare policy assumes that, to get the governmental bonus, farmers have to invest own money to improve the animal welfare conditions; obviously, with high oscillation of milk price, the decision making process of farmers distract its priorities on this important aspects.

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An additional specific policy for the sheep sector development was identified in the opportunity to build a big data pipeline of the available data of the supply chain relatively to deliveries, cheese stock, milk prices and related variables. It will be beneficial to get information on the status of the milk production and cheese market, to improve transparency and to support the decision making process of the stakeholders. The big data pipeline, called Spreadsheep, should include data already available in the regional areas with a monthly aggregation level. In particular data of milk deliveries should be gathered from the national recording system (i.e. for the estimation of producing heads) and from a given number of sample farms selected considering altitude, geographical area geographical area, flock size, livestock system, and average annual production level of the flock. For milk processing and cheese stocks, data will be gathered at cheese factory level and from world trade databases accessed by the Consortium of Pecorino Romano DOP. A special informatics effort for data compression, storage and elaboration should be executed to develop the big data pipeline. Browsing framework and in cloud platforms and datawarehouses need also to be developed in order to provide graphical output for easy and quick consultation on the web. The forecasted effect of Spreadsheep on the decision making process and sheep milk price determination in Sardinia was included in the causal diagram, in order to stimulate polices of system improvement. Spreadsheep will act reducing delays in the perception of the market status, reducing speculative behaviors and allowing the reduction of the oscillation of the milk price due to regional equilibrium.

Keywords: Pecorino Romano, sheep milk, trade, market, milk price, system thinking.

REFERENCES

Atzori A.S., Furesi R., Madau F.A., Pulina P., Rassu S.P.G. (2015). Sustainability of Dairy Sheep Production in Pasture Lands: A Case Study Approach to Integrate Economic and Environmental Perspectives. Reviews of Studies on Sustainability. 1:117-134.

BDN (2016). Italian database of livestock species. http://statistiche.izs.it/ Accessed on December 2016.

ISBN: 9788890824258

Ismea-Laore (2016). Milk and sheep cheese. Economical report of 2015. (in Italian). Available at http://www.sardegnaagricoltura.it/index.php?xsl=446&s=14&v=9&c=9413&na=1&n=10

Laore, 2013. Sheep sector and regional livestock, structural data. Comparto ovi-caprino e zootecnia regionale, dati strutturali (Italian). Available at www.sardegnaagricoltura.it/documenti/14_43_20130124141134.pdf

Sterman, J. (2000). Business Dynamics Systems Thinking and Modeling for a Complex World. Ir-win/McGraw-Hill, New York

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BOOK OF ABSTRACTS

The challenges and opportunities of using the Industry 4.0 technologies for the integration of knowledge management processes through building collective networks of strategic intelligence

Vasja Roblek
Assistant of Research Methodologies and Health Management, Higher Institution Fizioterapevtika, Slovenia.
e-mail: vasja.roblek@gmail.com
Corresponding author

Maja Meško
Associate Professor of Management, Faculty of Management, University of Primorska, Slovenia.
e-mail: maja.mesko@fm-kp.si

Vlado Dimovski
Full Professor of Management and Organization, Faculty of Economics University of Ljubljana, Slovenia.
e-mail: vlado.dimovski@ef.uni-lj.si

Judita Peterlin
Assistant Professor of Management and Organization, Faculty of Economics University of Ljubljana, Slovenia.
e-mail: judita.peterlin@ef.uni-lj.si

Abstract

The emergence of the Internet in the early nineties of the twentieth century (period of the internet or digital economy) has influenced the rise of the third wave of capitalism. The Internet launched the new institutional revolution in the globe. The consequences have been seen in increasing the importance of networks and crowds in relation to market institutions (Roblek, Pejić Bach, Meško and Bertoncelj, 2013).

Network economics considers the integration as a strategic instrument that affects the production of knowledge and increasingly important role of information and humans with

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knowledge for the modern knowledge society. Networking provides an upgrade or appropriate synergy between the exchange information, knowledge and human resources. Knowledge and information have become a key factor for success in the 21 century (Dominici, Roblek and Lombardi, 2016).

Thus, in 2011, came in Germany to the development of the phenomenon of Industry 4.0. (Mosconi, 2015). It represents a concept which is based on the perpetual communication via the internet and allows a continuous interaction and knowledge management processes not only between humans, human and machine, but also between the machines themselves (Ning and Liu, 2015; Roblek, Meško and Krapež, 2016)

What actually represents the phenomenon of Industry 4.0 and smart technologies and how will in the future these emerging technologies influence social innovation and the development of collective networks based on strategic intelligence in which parts of the economy and the human environment, it is expanding, is probably most evident from the expressions with which it is associated (Castells, 2015; Kaivo-Oja et al., 2016; Nitti et al., 2015). It should be remembered that the development of smart technologies is increasingly encroaching on areas of artificial intelligence and capability of independent thought.

Young people are today more and more exposed to constantly - both social and technological -changes in the environment, which consequently require from them new skills, investing in attaining, sharing and creating knowledge, which requires access to information systems and, consequently, acquaintances connections worldwide (Lu, Hao and Jing, 2016; Navaro and Aranda, 2011).

This led us to prepare a survey that will be carried out among business students in three different countries and to gain the views of young people from different backgrounds on the use of modern "smart" technologies and their opinion about the impact of emerging (smart) technologies to new forms of communication, acquisition and dissemination of information and social innovation in the next 20 years.

The purpose of the paper is to develop and present a novel methodology of social innovation among management students (Hargreaves et al., 2006). In order to gain potential

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usefulness of the proposed social innovation methodology, students first need to be exposed to real life examples (Bertoncelj et al., 2016).

Social innovation (Osburg, 2013; Goldsmith, 2010) is a novel methodological approach that means "innovation in social relations" (Moulaert et al., 2015). Social innovation is an ongoing field of research for three reasons (Moulaert et al., 2015): 1) most of the social problems in our societies are far from being solved, and new ones are likely to arise as globalization, competitive pressures and free-market policies will continue to shape the socio-economic functioning of the society; 2) research methodologies on social innovation are far from being stabilized or agreed upon by all researchers and stakeholders; 3) how to position research about social innovation in social setting: cross learning and dialogue among researchers and field practitioners need to advance. We aim to research how smart technologies will influence social relations of the young generation.

Research questions

Qualitative analysis will generate answers to these questions:

1. How will smart technologies influence on respondents' private and professional communication and consequently the quality of their life in next 20 years?
2. How do students use smart technologies to consume, create, and share content now and how they envision to use them in the future (e.g. in the next 20 years)?
3. Among the proposed factors, which ones most influence students' use of emerging (smart) technologies to consume, create, and share contents in their private and professional life? The proposed factors include personal and contextual factors, opinions of emerging (smart) technologies, and self-regulation behaviors.

Social innovation methodology

Social innovation incorporates several different techniques, such as participant observations, ethnography, interviewing, life histories, focus groups, visual analysis, landscape interpretation, archival research, textual and discourse analysis in a unique combination according to the needs of the research project (Konstantatos et al., 2015, p. 275). Qualitative

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techniques aid the need to uncover relations which we cannot easily observe, however they do inform and direct "socially creative initiatives" (Konstantatos et al., 2015, p. 279). "The ontology of knowledge in social innovation analysis and practice calls for a researcher's positioning towards the genesis of the views of the world as a social process and the outcome as socially reproduced, therefore never reaching completion and always critically reinterpreted" (Moulaert in Konstantatos et al., 2015, p. 282). "Assets and strengths based development approaches have research strategies within their practice which link general and local relations and conditions to knowledge to enable action. The strategies most commonly used derive from qualitative, critical action research methodologies and appreciative inquiry methods; methods which resonate strongly with the concerns of social innovation research" (Kunnen et al., 2015, p. 285). "Social innovation clearly shows that research cannot be the responsibility of a single social science discipline, nor entrusted to theoretical and empirical analysis only, but that it has, instead, a strong action orientation" (Moulaert et al., 2015, p. 14).

The study will be conducted in Slovenia, Croatia and Italy and will include students from Erasmus programme. In the first phase we will design a questionnaire on gaining understanding of the students' perception of their usage of smart technologies. In the second phase a questionnaire on social innovation and solutions to business challenges by providing new smart technologies will be designed. In the third phase approximately 20 in-depth interviews will be carried out.

The study will be designed according to the general method of case studies (Easterby-Smith, Thorpe and Lowe, 2002). A study on the impact of smart technologies in the future life processes will contain elements of the exploratory and descriptive case studies. A combination of both grounded theory Yin (2005) and case study Dimovski et al. (2008) will be used as appropriate for the design study model, which allows to use the researched results in practice.

Keywords: Knowledge management processes, Industry 4.0., Collective networks, Strategic intelligence, Youngster's, Qualitative research

REFERENCES

Bertoncelj, A., Bervar, M., Meško, M., Naraločnik, A., Nastav, B., Roblek, V., Trnavčevič, A. (2016). *Sviluppo sostenibile: aspetti economici, sociali ed ambientali*. Business Systems Laboratory.

Castells, M. (2015). *Networks of outrage and hope: Social movements in the Internet age*. San Francisco, CA: John Wiley & Sons.

Dimovski, V., Škerlavaj, M., Penger, S., Ghauri, P.N., & Grønhaug, K. (2008). *Business research*. Harlow, UK: Pearson.

Dominici, G., Roblek, V., & Lombardi, R. (2016). A holistic approach to comprehending the complexity of the post-growth era: the emerging profile. In *Chaos, Complexity and Leadership 2014* (pp. 29-42). Chem, Suisse: Springer International Publishing.

Easterby-Smith, M., Thorpe, R., & Lowe, A. (2002). Management research: An introduction. London, UK: Sage.

Goldsmith, S. (2010). *The power of social innovation*. San Francisco, CA: John Wiley & Sons.

Hargreaves, A., Fink, D. (2006). *Sustainable leadership*. San Francisco, CA: John Wiley & Sons

Kaivo-Oja J., Roth S., Westerlund, L. (2016). Futures of robotics. Human work in digital transformation. *International Journal of Technology Management*, Forthcoming.

Kezar, A. J., & Lester, J. (2011). *Enhancing campus capacity for leadership: An examination of grassroots leaders in higher education*. Stanford, CA: Stanford University Press.

Konstantatos, H., Siatitsa, D., Vaiou, D. (2015). Qualitative approaches for the study of socially innovative initiatives, in Moulaert F., MacCallum, D., Mehmood, A., Hamdouch, A. (Eds.), *The international handbook on social innovation: Collective action, social learning and transdisciplinary research*. Cheltenham, UK: Edward Elgar Publishing: 274-284.

Kunnen, N., MacCallum, D., Young, S. (2015). Research strategies for assets and strengths based community development", in Moulaert F., MacCallum, D., Mehmood, A., Hamdouch, A. (Eds.), *The international handbook on social innovation: Collective action, social learning and transdisciplinary research*. Cheltenham, UK: Edward Elgar Publishing: 285-298.

Lu J., Hao Q., Jing M. (2016). Consuming, sharing and creating content: How young students use new social media in and outside school. *Computers in Human Behaviour*, 64: 55-64.

Markoff J. (2012). Scientist sees promise in deep–learning programs. *New York Times*. Available on: http://www.nytimes.com/2012/11/24/science/scientists–see–advances–in–deep– learning–a–part–of–artificial–intelligence.html?_r=1&

Moulaert, F., MacCallum, D., Hillier, J. (2015). Social innovation: intuition, precept, concept, theory and practice, in Moulaert F., MacCallum, D., Mehmood, A., Hamdouch, A. (Eds.), *The international Handbook on Social Innovation: Collective Action, Social Learning and Transdisciplinary Research*. Cheltenham, UK: Edward Elgar Publishing: 13-24.

Moulaert, F., MacCallum, D., Mehmood, A., Hamdouch, A. (2015). General introduction: the return of social innovation as a scientific concept and a social practice, in Moulaert F., MacCallum, D., Mehmood, A., Hamdouch, A. (Eds.), *The international handbook on social*

ISBN: 9788890824258

innovation: Collective action, social learning and transdisciplinary research. Cheltenham, UK: Edward Elgar Publishing:1-6.

Mosconi, F. (2015). *The new European industrial policy: Global competitiveness and the Manufacturing Renaissance*. London, England: Routledge.

Navaro – Sanchez J., Aranda D. (2011). Research note: Messenger and social network sites as tools for sociability, leisure and informal learning for Spanish young people. *European Journal of Communications*, 28(1): 67-75.

Ning H., Liu H. (2015). Cyber-physical-social-thinking space based science and technology framework for the Internet of Things. *Science China Information Sciences*, 58(3): 1-19.

Nitti M., Atzori L., & Cvijikj I. P. (2015). Friendship selection in the social internet of things: challenges and possible strategies. *IEEE Internet of Things Journal*, 2(3): 240-247.

Osburg, T. (2013) Social Innovation to Drive Corporate Sustainability, in Osburg, T., & Schmidpeter, R. (Eds.), *Social innovation: solutions for a sustainable future*. Berlin, DE: Springer Verlag.

Roblek V., Meško M., Krapež A. (2016). A complex view of Industry 4.0. *SAGE Open*, 6(2): 1-12.

Roblek, V., Pejic Bach, M., Meško, M., & Bertoncelj, A. (2013). The impact of social media to value added in knowledge-based industries. Kybernetes, 42(4), 554-568.

Yin, K.R. (2005). Case study research: design and methods. London, UK: Sage.

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BOOK OF ABSTRACTS

Service-script as an employee governance tool: Evidence from dual jobholders

Gianfranco Walsh
Professor of Marketing, Faculty of Economics, University of Jena, Germany.
e-mail: walsh@uni-jena.de
Corresponding author

Mario Schaarschmidt
Assistant Professor of Technology and Innovation Management, Institute for Management, University of Koblenz-Landau, Germany
e-mail: mario.schaarschmidt@uni-koblenz.de

Abstract

Service organizations need governance processes and tools to ensure compliance with overall rules and guidelines as well as to align their activities with strategic goals (Ferguson et al. 2005). As a general term, governance refers to how a service firm organizes and coordinates internal (i.e., back-office) and customer-directed (i.e., frontline) activities (e.g., Ostrom 1990). In many service firms, service scripts serve as a governance tool that facilitates the delivery of high-quality and customer-oriented services (Nguyen et al. 2014). A service script is a predetermined guide for employees to follow when delivering service to customers (Victorino et al. 2012). Many service firms use service scripts to ensure that the same service is executed in the same way each time it is delivered, regardless of who actually delivers the service (Brach et al. 2015). However, given that service firms increasingly hire employees that work two (or more) jobs (Walsh et al. 2016; Zickar et al. 2004), may call into question the efficacy of service scripts as governance tool. Specifically, working two service jobs likely depletes employee resources (Hobfoll 1989) and as a result, weakens adherence to an important governance tool—service scripts (cf. Hill and Hoskisson, 1987).

Despite the fact that the pertinent literature details negative outcomes of service script usage for employees (e.g., emotional exhaustion) and the growing prevalence of dual jobholders in many service economies, scarce research addresses service script usage for employees who

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have to work two service jobs. The current research focuses on employees that have to adhere to this governance approach (i.e., service scripts) in two jobs. Specifically, we investigate whether service script usage affects employees' available resources in terms of job autonomy and innovative work behavior. We chose to measure innovative work behavior as outcome variable because previous research has hinted at the relationship between governance and the creation of innovation (e.g., Dyer and Singh 1998). Moreover, we assess whether service script usage in a second job acts as a moderator of the link from service script usage in a first job to job and autonomy and whether the job autonomy-innovative work behavior link is moderated by innovativeness as job requirement.

Using a crowdsourcing platform to survey dual jobholders, we employed a predictive survey design and separated data collection for measures concerning script usage (time1) from measures concerning job autonomy and innovative work behavior (time2). A series of attention check questions and several control questions were used to exclude inattentive persons and persons who do not work two service jobs. In a first round, we received answers from 228 dual jobbers (time1). Two weeks later, we sent out a second survey to the same set of people with a slightly higher incentive. Overall, 127 of time1 respondents answered the second part of the survey. We measured all constructs on 7-point Likert-type scales. Using the Process package (Hayes 2013), our proposed model and hypothesized paths were tested on the survey data collected.

Among others, we find significant main effects in that service script usage in a primary job negatively affects job autonomy in a primary job ($b = -.27$, $p < .01$), and job autonomy subsequently affects innovative work behavior positively ($b = .21$, $p < .01$). We also found a significant indirect effect for service script usage in a primary job on innovative work behavior through job autonomy ($b = -.06$, $p < .05$). It is also of high interest how aspects of the second job spill-over to existing paths in relation to the primary job such as the link from script usage to job autonomy. Therefore, we calculated interaction effects of service script usage in a second job on the path from service script usage in the primary job to job autonomy. While this interaction effect was not significant, applying the Johnson-Neyman-technique revealed that different regions of significance exist. The results thus mildly point to a moderating effect of service-script

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usage in a second job. Taken together, our findings reveal that a common governance tool in the services sector, service scripts, may have unwanted consequences for the organization.

Keywords: Service scripts, Employee governance, Dual jobbers

REFERENCES

Brach, S., Walsh, G., Hennig-Thurau, T., & Groth, M. (2015). A Dyadic Model of Customer-Orientation - Investigating Mediation and Moderation Effects. *British Journal of Management*, 26 (2), 292-309.

Dyer, J. H., & Singh, H. (1998). The relational view: Cooperative strategy and sources of interorganizational competitive advantage. *Academy of Management Review*, 23 (4),

660-679.

Ferguson, R. J., Paulin, M., & Bergeron, J. (2005). Contractual governance, relational governance, and the performance of interfirm service exchanges: The influence of boundary-spanner closeness. *Journal of the Academy of Marketing Science*, 33 (2), 217-234.

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Press.

Hitt, M. A., Biermant, L., Shimizu, K., & Kochhar, R. (2001). Direct and moderating effects of human capital on strategy and performance in professional service firms: A resource-based perspective. *Academy of Management Journal*, 44 (1), 13-28.

Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, 44 (3), 513-524.

Nguyen, H., Groth, M., Walsh, G., & Hennig-Thurau, T. (2014). The impact of service scripts on customer citizenship behavior and the moderating role of employee customer orientation. *Psychology & Marketing*, 31 (12), 1096-1109.

Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge: Cambridge Univ. Press.

Victorino, L., Verma, R., Bonner, B. L., & Wardell, D. G. (2012). Can customers detect script usage in service encounters? An experimental video analysis. *Journal of Service Research*, 15 (4), 390-400.

Walsh, G., Dahling, J., Schaarschmidt, M., & Brach S. (2016). Surface Acting Outcomes Among Service Employees with Two Jobs: Investigating Moderation and Mediation Effects. *Journal of Service Management,* 27 (4), 534-562.

Zickar, M. J., Gibby, R. E. & Jenny, T. (2004). Job attitudes of workers with two jobs. *Journal of Vocational Behavior*, 64 (1), 222-235.

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BOOK OF ABSTRACTS

Dynamic capability for multi-stakeholder management

Patrizia Gazzola
Associate Professor of Management. Departmenof Economics , University of Insubria, Italy
e-mail: patrizia.gazzola@uninsubria.it
Corresponding author

Piero Mella
Full Professor of Business Administration. *Department of Economics and Business, University of Pavia, Italy*
e-mail: piero.mella@unipv.it

Abstract

The research aims to analyze the role of multi-stakeholder management in times of environmental volatility. We consider organizations as social systems, capable of responding to environmental and organizational uncertainties and threats, and capable to use opportunities to survive (Tushman and Nadler, 1990). The idea that firms must be aligned with their environments has long been a dominant assumption of organizational theorists and strategists. Even the most solid organizations feel the weight of the uncertainty that oppresses visionary leaps and crushes the passions and interests of employees (Gazzola and Colombo, 2013). Environmental volatility is unpredictable and need a good information system (Lee, Koh, Yen and Tang, 2002; Seilheimer, 2000). The difficulty of managing the uncertainty makes it very dangerous because the uncertainty cannot be calculated. In a rapidly changing environment, a company can face the uncertainty and transform it in opportunity when it has the ability to alter its resource base to achieve congruence with the changing environment. This is the dynamic capability of a firm. In an increasingly interdependent and turbulent globalised world, the isolated advancement of singular interests and partial solutions aren't efficient. In this study, multi-stakeholder management is presented as a form of relational organizing in response to a crisis of governance

The work focus on the "stakeholder dialogue" (Ayuso, Rodríguez, Ricart, 2006). To reach this goal the study follows the dynamic capabilities (Teece et al. 1997).

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The first concept we analyze is the multi-stakeholder dialogue. In recent literature, "stakeholder dialogue" have been identified as one of more specific capabilities, leading firms to a dynamic capability for multi-stakeholder interaction. (Hult 2011; Zollo and Verona 2011). Stakeholder dialogue can be defined as the capability to interact with stakeholders (Kaptein and van Tulder, 2003.

Organizations do not simply respond to each stakeholder individually; but they have to consider the interaction of multiple influences from the different stakeholder groups. Stakeholders are connected in a network of influences. Furthermore an organization isn't necessarily at the centre of the network, but rather as a stakeholder in its relevant social system. Freeman and Evan (1990, p. 354), consider stakeholder relations as "a series of multilateral contracts" as a network of influences.

Stakeholder networks are becoming more important (Powell, 1990). Hill and Jones (1992) use 'agency-stakeholder model', to analyze the firm as a nexus of contracts among stakeholders. De Bakker and den Hond (2008) also consider stakeholders in competition of gaining salience, which collaborate and operate in a stakeholder network asking firms to decide which of them to prioritize over others in managing stakeholder issues.

Multi-stakeholder interactions enable firm to work together with multiple stakeholders in order to solve social and environmental issues. Interactions with multiple stakeholders will lead to firms which are better able to respond to the pressures from the environment. Furthermore, these insights will drive the development of new markets and create opportunities for growth (Dentoni and Peterson 2011).

An important characteristic of the stakeholder management is the dynamics of stakeholders. Over time, the stakeholders may change. New stakeholders has to be included, while others may drop out. The concept of the dynamics of stakeholders was acknowledged by Freeman (1984), and according to him, in reality stakeholders change over time, and their stakes change depending on the strategic issue under consideration. Alkhafaji (1989) also contributed to the understanding of this concept to explain the dynamics, he defined stakeholders as the 'groups to whom the corporation is responsible (Elias and Cavana, 2000). Stakeholder Management theory can help managers accomplishing this very same daunting task. This theory demands

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managers to reckon the reciprocal influences linking other social actors to the enterprise activities and to understand the relative effects (Gazzola and Mella, 2015).

The second concept we analyze is the dynamic capability. The concept of dynamic capabilities refers to the firm's' ability to develop and extend resources and competences to adapt to a changing environment (Teece, et al., 1997; Eisenhardt and Martin, 2000; Teece, 2007). Teece, Pisano, and Shuen (1997) define dynamic capability as ability to integrate, build and reconfigure internal and external competencies to address rapid changing environment. They refer to high-level competencies that determine how well business enterprises are able to integrate, build, and reconfigure internal and external resources to address and shape a rapidly changing business environment (Nelson and Winter, 1982) in situations of unpredictable change (Eisenhardt and Martin, 2000). Plentiful articles trying to demystify the approach indicate the ongoing and prevailing uncertainty, e.g. "Understanding Dynamic Capabilities" (Winter, 2003), or "Explicating Dynamic Capabilities" (Teece, 2007). Since Teece, Pisano, and Shuen's (1997) seminal paper, dynamic capabilities have attracted much research interest (e.g., Di Stefano, Peteraf, and Verona, 2010; Eisenhardt and Martin, 2000; Zollo and Winter, 2002; Zott, 2003). However, important gaps in our knowledge of their nature remain (Easterby-Smith, Lyles, and Peteraf, 2009; Kor and Mesko, 2013).

To address this gap in the literature, this study will examine "stakeholder dialogue" like driver that enable firms to survive in the environmental volatility. With this, we are better able to understand how a dynamic capability can facilitate the achievement of this goals by using multi-stakeholder interaction. It helps to understand why some firms succeed, some eke out survival, and some fail. Dynamic capability is the ability to create and adapt routines as a result of the interaction with multiple stakeholders (Zollo and Winter, 2002).

Keywords: Multi-Stakeholder Management, Dynamic Capability, Uncertainty.

REFERENCES

Alkhafaji, A. F. (1989). *A stakeholder approach to corporate governance*. *Managing in a dynamic environment*. Westport, CT: Quorum books.

Ayuso, S., Rodríguez, M. Á., Ricart, J. E. (2006). Using stakeholder dialogue as a source for new

ISBN: 9788890824258

ideas: a dynamic capability underlying sustainable innovation. Corporate Governance: *The international journal of business in society*, 6 (4): 475 -490.

De Bakker, F. G., Den Hond, F. (2008). Introducing the politics of stakeholder influence a review essay. *Business & Society*, *47*(1), 8-20.

Dentoni, D., Peterson, H. C. (2011). Multi-stakeholder sustainability alliances in agri-food chains: A framework for multi-disciplinary research. *International Food and Agribusiness Management Review*, *14*(5), 83-108.

Di Stefano, G., Peteraf, M., Verona, G. (2010). Dynamic capabilities deconstructed: a bibliographic investigation into the origins, development, and future directions of the research domain. *Industrial and Corporate Change*, 19(4): 1187-1204

Easterby-Smith, M., Lyles, M. A., Peteraf, M. A. (2009). Dynamic capabilities: Current debates and future directions. *British Journal of Management*, *20*(s1): S1-S8.

Eisenhardt, K. M., Martin, J. A. (2000). Dynamic capabilities: What are they? *Strategic Management Journal*, 21(10/11): 1105-1122.

Elias, A. A., Cavana, R. Y. (2000). Stakeholder analysis for systems thinking and modeling. In *Victoria University of Wellington, New Zealand. Conference paper*.

Freeman, R.E. (1984). *Strategic Management: A Stakeholder Approach*. Boston: Pitman

Freeman, R. E., Evan, W. M. (1990). Corporate governance: A stakeholder interpretation. *Journal of behavioral economics*, *19*(4): 337-359.

Gazzola P., Mella P. (2015). Ethics builds reputation, International Journal of Markets and Business Systems, 1(1): 38-52.

Gazzola, P., Colombo, G. (2013). Stakeholder engagement between managerial action and communication. *The Annals of the University of Oradea* – Economic Sciences Tom XXI, 2nd[t] issue/dicember: 97-105

Hill, C. W., Jones, T. M. (1992). Stakeholder-agency theory. *Journal of management studies*, *29*(2): 131-154.

Hult, G. T. M. (2011). Market-focused sustainability: market orientation plus! *Journal of the Academy of Marketing Science*, 39 (1): 1-6.

Kaptein, M., van Tulder, R. (2003). Toward Effective Stakeholder Dialogue. *Business and Society Review*, 108 (2): 203–224.

Kor, Y. Y., Mesko, A. (2013). Dynamic managerial capabilities: Configuration and orchestration of top executives' capabilities and the firm's dominant logic. *Strategic Management Journal*, *34*(2): 233-244.

Lee, S., Koh, S., Yen, D., Tang, H. L. (2002). Perception gaps between IS academics and IS

ISBN: 9788890824258

practitioners: an exploratory study. *Information & Management*, *40*(1), 51-61.

Nadler, D. A., Tushman, M. L. (1990). Beyond the charismatic leader: Leadership and organizational change. *California management review*, *32*(2): 77-97.

Nelson, R. R., Winter, S. G. (1982). *An Evolutionary Theory of Economic Change*. Cambridge, MA: The. Belknap Press of Harvard University Press

Powell, M. J. (1990). *The theory of radial basis function approximation in 1990* (pp. 105-209). University of Cambridge. Department of Applied Mathematics and Theoretical Physics.

Seilheimer, S. D. (2000). Information management during systems development: a model for improvement in productivity. *International Journal of Information Management*, *20*(4), 287-295.

Teece, D. J. (2007). Explicating Dynamic Capabilities: The Nature and Microfoundations of (Sustainable) Enterprise Performance. *Strategic Management Journal*, 28(13): 1319-1350.

Teece, D. J., Pisano, G., Shuen, A. (1997). Dynamic Capabilities and Strategic Management. *Strategic Management Journal*, 18 (7): 509-533.

Winter, S. G. (2003). Understanding Dynamic Capabilities. *Strategic Management Journal*, 24 (10): 991-995.

Zollo, M., Verona G. (2011). *The human side of dynamic capabilities: a holistic learning model*. In Handbook of Organizational Learning and Knowledge Management (2nd edn), Easterby-Smith M, Lyles MA (eds). Wiley: Chichester, UK.

Zollo, M., Winter, S. G. (2002). Deliberate Learning and the Evolution of Dynamic Capabilities. *Organizational Science*, 13: 339-351.

Zott, C. (2003). Dynamic capabilities and the emergence of intraindustry differential firm performance: insights from a simulation study. *Strategic management journal*, *24*(2): 97-125.

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BOOK OF ABSTRACTS

The spin-offs organization: A systemic view

Walter Vesperi
Phd student Faculty of Economic
University of Messina, Italy.
e-mail: waltervesperi@libero.it Corresponding author

Rocco Reina
Associate Professor of Organization Studies Faculty of law, economic and social science
University of Catanzaro, Italy.
e-mail: rreina@unicz.it

Primiano Di Nauta
Associate Professor of Organization studies Faculty of Economics,
University of Foggia, Italy.
e-mail: primiano.dinauta@unifg.it

Abstract

The Spinoffs Organizations are the main mechanism of knowledge transfer from universities and/or High Educational Institutions (HEIs) to economic system. For this reason, the presence of a large number of spinoffs in a specific economic context creates conditions for competitive growth. The spin-off firms are a complex phenomenon that need for particular conditions to its creation, survival and development. For this reason, in the last decade, the scientific debate focused on the identification of factors able to create a favourable environment for spinoff.

The importance and the role of spinoff are recognized from scholars, practitioners and police makers.

Through a review of a main literature on subject, we want to identify the main factors and actors that impact on creation, survival and development of spinoffs.

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This study is divided in two-step. In the first step, we want to highlight the main elements and factors, identified in the literature as "success factors" for creation of spin-offs. In the second step, we try to we want to try to theorize the relationship between these variables and the spinoff.

In this work, we use a qualitative and descriptive method. From a brief analysis of the literature, we identified the main elements and actors that constitute the environment of the spin-off. This study is based on a qualitative and exploratory descriptive methodology.

Through the analysis of the principal reference literature we identified the "success factors" for spin off. The "success factors" for spin off for scholars are the main elements and actors that constitute the system of the spin-off.

The originality of this investigation lies in its ability to offer a picture and first analysis about main factors of the spin-off environment. In particular, we offer several consideration about the spin-off system.

Highlighting the characteristics of the spin-off system allows us to formulate new policies for the growth of these organizations. The study of relationships of spin-offs and success factors, in specific context, can offer useful information for the development of a research-innovation-enterprise system. This study want to offer a first consideration about an interpretation of "success factors" for spin-offs creation.

***Keywords*:** University Spin-offs, Academic Entrepreneurship, success factors, spinoff system

REFERENCES

Berbegal-Mirabent, J., Ribeiro-Soriano, D. E., & García, J. L. S. (2015). Can a magic recipe foster university spin-off creation?. *Journal of Business Research*, *68*(11), 2272-2278.

Capasso, A., Rossi, M. (2013). Systemic value and corporate governance. Exploring the case of professional football teams. *Business System Review*, 2(2): 216-2136.

Chiesa, V., & Piccaluga, A. (2000). Exploitation and diffusion of public research: the case of academic spin-off companies in Italy. R&D Management, 30(4), 329-340.

Dominici, G., & Levanti, G. (2015). The incubation process for the creation of viable firms: the case of ARCA Consortium. International Journal of Markets and Business Systems, 1(1), 4-27.

Franck E. (2010). Private Firm, Public Corporation, or Members' Association: Governance Structures in European Football. International Journal of Sports Finance, 5(2): 108-127.

ISBN: 9788890824258

Gras, J. M. G., Lapera, D. R. G., Solves, I. M., Jover, A. J. V., & Azuar, J. S. (2008). An empirical approach to the organisational determinants of spin-off creation in European universities. *International Entrepreneurship and Management Journal*, *4*(2), 187-198.

Iacobucci, D., & Micozzi, A. (2015). How to evaluate the impact of academic spin-offs on local development: an empirical analysis of the Italian case. *The Journal of Technology Transfer*, *40*(3), 434-452.

Lazzeri, F., & Piccaluga, A. (2014). Le imprese spin-off della ricerca pubblica in Italia: cosa fare dopo le prime mille?. *Sinergie quaderni di ricerca*, (17).

Ramaciotti, L., & Rizzo, U. (2015). The determinants of academic spin-off creation by Italian universities. *R&D Management*, *45*(5), 501-514.

Walter, A., Auer, M., & Ritter, T. (2006). The impact of network capabilities and entrepreneurial orientation on university spin-off performance. Journal of business venturing, 21(4), 541-567.

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Adaptive Manufacturing: Challenges to the Industrial and Scientific Community

Luca Pazzi
Research Associate, Department of Engineering "Enzo Ferrari",
University of Modena and Reggio Emilia, Italy
e-mail: luca.pazzi@unimore.it
Corresponding author

Marcello Pelliciari
Associate Professor, Department of Engineering "Enzo Ferrari",
University of Modena and Reggio Emilia, Italy
e-mail: marcello.pellicciari@unimore.it

Abstract

Adaptive manufacturing poses many challenges to the industrial and scientific community. One of the main interesting issues, still requiring further research efforts, consist in achieving effective modularisation of both control systems and related physical machinery. Modularisation brings evident advantages towards effective and fast reconfiguration of assembly lines, maintaining at the same time high reliability of the single machinery as well as safety and effectiveness of more complex production units. Safety and reliability of either a single device or production cell are however not enough in order to ensure safety of more complex assembly units. Novel methodologies which consider manufacturing at the system level are then required. In general, safety (as well as hazard) is indeed an emergent systemic property and as such requires to be dealt with specific, system oriented, methodologies. Such methodologies allow to obtain control software which is "correct-by-design" and are tightly integrated with design: interestingly, such methodologies may be applied from the intra-device level to single devices, machinery, production units, assembly lines. As complexity increases, it becomes possible to deal with single primary faults within simple mechanical components (for example small engines and actuators) to more complex units, for example production cells and assembly lines, providing increasing levels of failure detection and protection, ranging from primary faults to fail operational and fail safe behaviours.

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Keywords: Adaptive Manufacturing, Compositional Safety and Reliability; Efficiency.

REFERENCES

Chase Jr, C. W. (2013). *Demand-driven forecasting: a structured approach to forecasting*. New York (USA:): John Wiley & Sons.

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Developments in Model-Based Trade Policy Analysis

Nino Papachashvili
Associate Professor of Iv. Javakhishvili Tbilisi State University,
Faculty of Economics and Business, Georgia.
e-mail: nino.papachashvili@tsu.ge

Abstract

Within the Work, we aim at analytical overview of the methods of trade policy analysis. At that, we make emphasis on some new tendencies in international trade. We express our opinions concerning the expedient approaches to the relevant analysis of trade policy. Besides, for further considerations, we raise the question about the adequate response to be made by the economic education to the new challenges and the question of formation of own opinion regarding the hereof issue.

The international trade is a constantly changing and moving system. The recent decades were marked by a reduction in the influence of tariff barriers (which began earlier), the increase in non-tariff barriers, the development of a multipolar supranational system, the change in technologies of trade, etc.

Turbulent developments in international economy outline new tasks for proper application of the methods of trade policy analysis. At that, it implies the greatest challenge for economic education as well. The programs of economic profile, aiming at education of the analysts of economy and advisors to the politicians, facilitate to the Universities to provide rapid and relevant response to the new challenges. Naturally, it covers the tools of trade policy analysis as well.

In general, the trade policy analysis applies pre-classic, classic and alternative theoretical approaches. Part of the work is devoted to more common methods for the analysis of international trade. There is provided the opinion about their beneficial application. The review of model-based trade policies are based on common text-books of International Economics by

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Krugman (Krugman, 2014), Feenstra (Feenstra, 2012), Gerber (Gerber, 2014), Carbaugh (Carbaugh, 2012) etc., also, on guidelines of international organizations. Following models are emphasized in the work: gravity equation, partial-equilibrium trade-policy simulation, model of general equilibrium. Also, the paper discusses possibilities of trade policy analysis on the basis of "new new trade theory" (Melitz, Redding, 2013, 2014).

The hereof text-books of international economics, used by the number of Universities in their syllabuses to teach international trade, offer a wider range for the model-based trade policy analysis. We could state that the methodological guidelines developed within the international organizations (e.g. World Trade Organization) also serve to basically resume the methods of analysis provided in the text-books and offer the primary methods of trade policy analysis – based on classic and on some alternative theories. The hereof sources fairly provide that "the key question that a researcher encounters when asked to assess the effects of a given policy measure is deciding which methodological approach is best suited to answer the question given existing constraints. At this stage, dialogue between researchers and policy stakeholders is crucial as, depending on the circumstances, researchers may help policy-makers to determine relevant questions and to guide the choice of appropriate methodologies" (A Practical Guide to Trade Policy Analysis, 2012, p. 10).

Necessity (and opportunity) of diversity of admissions for approximation to reality pushes us to further think out the proper methodological approaches and to develop the hereof issue.

Naturally, new developments require some new approaches in trade policy and updates in trade policy analysis methods. Scientists indicate to the new trends of international trade and old-fashion methods of analysis of trade policy.

For instance, new trends in international trading system cause discussions about changing the analytical tools. "The traditional analytical tools we have at our disposal (such as the standard computable general equilibrium (GCE) models widely used for trade policy analysis) have great strengths, notably at estimating the macro-economic effects of trade policy but they remain imperfect. Current tools tend to work well at aggregate level and whenever more detailed analysis is necessary they tend to be difficult and expensive" Cernat, 2014, p. 4).

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Amongst the modern peculiarities of international trade, we hereby attach our attention to the aspects as follows:

1. Extension of the global network of supply-chain has altered the architectonics of international trade. Quite fairly, the supply-chain trade is highlighted among the new trends in international trade. "Since 90s, globalization has been associated with a sharp drop in rich nations' share of world income, world manufacturing and world exports. The big winners are developing nations that industrialized by joining, rather than by building, supply chains. The world of trade politics and trade governance also changed. Supply-chain trade poses radically different coordination problems, so it is natural that the structure of the organization that solves it would be drastically different. The cross-border flows that trigger supply-chain trade tend to be one-way. Advanced-technology firms offshore tangible and intangible assets, combining them with low-wage labor in developing nations. The firms get higher returns on their firm-specific assets; the developing nations get fast-track industrialization (Baldwin, 2012). The new developments are widely discussed within some theories and are offered within the model-based analysis supply-chain, however, we shall take the fact into account that the complicated and tangled trade links entailed the number of problems, which first of all concerns availability of the relevant statistic data base. The countries encounter the hereof challenge. Under these circumstances, proper perception of the problems is of utmost importance for admissions and correct decision-making.

2. We believe, consideration of institutional compatibility in non-tariff barrier perspective is of paramount importance as well. Scientists pay attention to the various roles of institutions in the international economic relations (Levchenko, 2008; Busch and Edward) but it still has not common character for considering on the "text-book level". The author believes that considering of institutional factor (institutional distance) will be more helpful for the realistic analysis of trade policy. Based on the fundamental works on institutionalism, the number of scientists offers an assessment of the role of the institutions in trade policy analysis. For instance, our attention was attracted by the work of Wruuck (Wruuk, 2015), where the range of the scientific studies on the junction of two hereof issues are systematized.

The issue generally is in the focus of Institutionalists but we believe that more attention should be paid from the point of analysis of trade policy. It is known that after the 2008 global-

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financial crisis the non-tariff barriers dramatically increased. The greater part of the barriers is of different types of standards. Their role could be discussed bilaterally. On the one hand, they damage the commercial interests and on the other hand, promote the expansion of trade and economic relations of trading countries, which formal institutions have harmonized.

Consideration of the increasing role of the institutions and the institutional distance in the model-based trade policy analysis is doomed to be important deriving that the opinions have recently been expressed regarding development of international trade within the multi-polar system. It derives from the block-integration development perspective of the modern world, which implies the institutional order within the block and entails the main question about the institutional distance: the degree of response of the trade partners with the standards (non-tariff barriers) available within the block.

Deriving from the increasing role of the new non-tariff barriers, institutional compatibility and institutional distance issues are necessarily to be included into the trade policy analysis.

And finally, let us reiterate the main question: the methods of currently available model-based trade policy analysis shall be developed. Multitude of admissions requires proper and careful application of models.

Upon analyzing trade policy, application of heterodox theories would be far expedient. In this regard, noteworthy the complex works proposed by Van den Berg (Van den Berg, 2015).

Acknowledgement of the above-said factors and intensive application of case study methods in the education process will approximate us to reality. We shall remember that proper application of trade policy tools is the pre-condition serving the basis for policy outcomes undertaken in reality.

Keywords: trade policy analysis.

REFERENCES

A Practical Guide to Trade Policy Analysis (2012). United Nations and World Trade Organization, WTO Publications.

ISBN: 9788890824258

Baldwin (2012). Richard Baldwin, WTO 2.0: Thinking ahead on global trade governance, VoxEU.org – CEPR's policy portal.

Busch and Edward, The Political Economy of Trade Policy, by Marc L. Busch and Edward D. Mansfield,

http://faculty.georgetown.edu/mlb66/Trade%20--%20Determinants%20of%20Policies.pdf.

Carbaugh (2012). International Economics by Robert J. Carbaugh, South-western Cengage Learning.

Cernat (2014). Towards "Trade Policy Analysis 2.0", From National Comparative Advantage To Firm-Level Trade Data, by Cernat Lucian

http://trade.ec.europa.eu/doclib/docs/2014/november/tradoc_152918.pdf.

Feenstra (2012). International Economics, Second Edition, by Robert C. Feenstra, Alan M. Taylor, World Publishers.

Gerber (2014). International Economics (6th Edition), by James Gerber, Pearson Economics.

Krugman (2014). International Economics: Theory and Policy, 10th Edition, by Paul R. Krugman, Maurice Obstfeld, Marc Melitz, Pearson.

Levchenko (2008). International Trade and Institutional Change, Andrei A. Levchenko, University of Michigan and International Monetary Fund, September 2008.

Melitz, Redding (2013). Marc Melitz, Stephen Redding, How do firm-level responses to trade affect industry productivity and the gains from trade? http://voxeu.org/article/gains-trade-firms-and-productivity.

Melitz, Redding (2014). Missing Gains From Trade? Marc J. Melitz, Stephen J. Redding Working Paper 19810 http://www.nber.org/papers/w19810 National Bureeau of Economic Research 1050, Massachusetts Avenue Cambridge, MA 02138 January 2014.

Trade and institutions: do not forget institutional distance, Aljaˇz Kunˇciˇc, 2013 https://www.cerge-ei.cz/pdf/gdn/rrc/RRCXII_51_paper_02.pdf

Springer International Publishing Switzerland 2015.

Van den Berg (2015). International Economics. A Heterodox Approach, Second Edition, Routledge 2015.

Wruuck (2015). The Political Economy of Anti-dumping Protection, Contributions to Economics, Chapter 2, Institutions and Trade Policy: A Review, By P. Wruuk, Springer International Publishing Switzerland 2015.

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BOOK OF ABSTRACTS

Walking the talk: Catalyzing organizational values alignment

Fabian Szulanski
Professor of Systems Thinking, System Dynamics, and Innovation, Department of Innovation in Education, Instituto Tecnológico de Buenos Aires, Argentina.
e-mail: fszulans@itba.edu.ar
Corresponding author

Douglas Breitbart B.A.; J.D.
e-mail:dbreitbart@gmail.com
Co-author

Abstract

It is well known that values drive value (Kofman, 2006). However, dissonance and misalignment between declared and espoused values are ubiquitous worldwide. This organisational dysfunction triggers value destruction negative impacts, including morale erosion, brand devaluation due to perceived unethical behaviour, inflating risk management and legal budgets, and loss of deal opportunities, among others.

Value will be defined in a systemic way, transcending economic, social and environmental expressions of value, into a much more encompassing and larger scope.

There is also a common misbelief, which is that organisational values should be defined by a small group of leaders, with the expectation that after being defined they will cascade and embraced by the whole organisation.

Largest value destruction comes from large, multinational companies, so the focus will be on that segment.

Nurtured by business ecosystems thinking, design thinking, self organisation and other systemic frameworks, the research will propose a whole organisation, bottom-up, up and downstream approach for catalysing values alignment and transform organisations, one human being at a time.

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The methodology explanation will focus and expand on the upstream phase, which is the catalytic vision and process, which after completion, leaves the organisation ready for downstream activities leading to organisational transformation for values alignment, performed by subject matter experts and organisational transformation consulting firms.

The role of catalysts will be further explained, differentiating it from consultants, coaches and facilitators.

The aforementioned phase uses technology as an enabler, without the need to implementing new software platforms.

There is no prescription of any proprietary model nor platform in this approach, it fully empowers organisational teams for them defining, selecting and implementing catalytic activities by themselves. In parallel, the methodology proposes transformation at the human being level, by exposing them to a significant emotional experiences coaching process.

The catalytic activities which are proposed are: Designing and implementing a Values Audit; Developing a Values collective agreement; and a Values Checklist.

The first catalytic activity, the values audit, will expand and diffuse throughout the organisation in an organic way, to be defined in its scope and timing by the initial organisational team in charge. Scanning of misalignments are going to be automated and not dependent of surveys, but on semantic interpretation of ongoing information exchanges through the different communication platforms.

The second catalytic activity, the collective values agreement, assures that corporate values will be defined and honoured and fully owned by all organisation members. This modality dissolves the values cascading utopia.

The third catalytic activity, the definition of a values checklist, assures that before doing or communicating anything, the whole organisational community will have an artefact, defined by themselves collectively, that will allow them to assure that those actions and the related information will honor corporate values and avoid value destruction.

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In a values aligned organisation, all negative impacts manifested through systemic value destruction would be reversed over time. At the same time, values alignment will make organisations more resilient, anti-fragile and flourishing.

Corporate governance in a values aligned organisation would be more fluent, and this conjecture should be proved through a future doctoral program thesis from the corresponding author (Laszlo, 2016)

K*eywords:* Values, Organizational Transformation, Value.

REFERENCES

Kofman, F. (2006). Conscious Business. How to Build Value through Values. Boulder, CO: Sounds True.

Laszlo, A. (2016). Doctoral Program in Leadership and Systemic Innovation. Retrieved from the Internet from http://itba.edu.ar/doctoradoinnovacion/en.html on 09/26/16

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Intelligent managers require Systems Thinking

Piero Mella
Full Professor of Business Administration. *Department of Economics and Business, University of Pavia, Italy*
e-mail: piero.mella@unipv.it
Corresponding author

Patrizia Gazzola
Associate Professor of Management. Department of Economics , University of Insubria, Italy
e-mail: patrizia.gazzola@uninsubria.it

Abstract

Stafford Beer's Viable System Model teaches us that, in order to survive and develop, organizations must adapt to their environment, in the sense that they must be able to understand and foresee the variety in their environment and to adapt to or contrast this using an appropriate Control System. However, this requires managers who have the necessary "intelligence" – that is, the capacity to construct and modify in a timely fashion mental and formal models – and an organization capable of producing a "collective intelligence" that is dynamic and continually able to improve. "Survival learning", or what is more often termed "adaptive learning", is important – indeed it is necessary. But ... "adaptive learning" must be joined by "generative learning", learning that enhances our capacity to create (Senge 2006:14).

[In the international learning competition] ... those who are not willing and not prepared to live creatively and dynamically, to maintain their interest in broad-based learning during their entire lives, will lose this competition. Nations that are not able or willing to educate their children to aim for the highest possible objectives will be downgraded (Hampden-Turner; 1990). Peter Senge's ideas, which he presented in his excellent work entitled The Fifth Discipline, is clear and convincing: in order to survive, organizations must be transformed into learning organizations, which are organizations that develop a continual collective learning by putting all

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their members in a position to learn together while supplying them with the instruments for such collective learning. This can be achieved through:

… organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to see the whole together (Senge, 2006: 3).

The main condition for achieving this is to ensure that the individuals that make up the organization, in particular the governance and management, are capable of developing models for understanding the dynamics of the "internal world" – its structure and processes – and of the "outside world" – the vital environment in which they operate and which conditions them – and to connect these "two worlds".

Understanding means constructing models of what we observe; learning means possessing those models in order to know how to use them and transmit them to others. The knowledge process (understanding and learning) is the formation and continual modification of the system of models that constitute knowledge. Thanks to models people can not only "understand the world" but above all "learn to live" – that is, to act, plan and foresee the future in order to improve their existence as well as that of the organizations of which they and their descendants are a part. According to Kazuo Ichijo, and Ikujiro Nonaka, knowledge creation is an art, not a science.

The creation of knowledge is not simply a compilation of facts but a uniquely human process that cannot be reduced or easily replicated. It can involve feelings and belief systems that may not be conscious even for managers who create knowledge (Ichijo and Nonaka 2007, p. 85). If the capacity to understand "the world" and survive its dynamics depends on the ability of individuals and organizations to construct models to understand, explain and simulate the world's dynamics, then the most useful and effective models to strengthen our intelligence are the system ones based on the logic of Systems Thinking. This capacity defines "intelligence". Intelligent persons have the ability (innate or acquired) to construct, utilize and modify models; that is, to continually improve their knowledge. Such individuals are the ones who "see" the world in advance, who always "know" what is happening and what could happen, in order to deal with

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changes, control events and successfully face the various situations in their lives, deciding in the most rational way how to solve problems. It is immediately clear that intelligence represents the main and necessary ability required of managers of organizations that wish to develop the resilience to survive and that desire to improve and develop their structures and processes over time. To survive in a world of constant change, managers must develop their intelligence, quickly learning to construct models to understand processes and their effects, long or short term, close or distant to them in space, and if possible, to dominate them, that is, predict and control them.

Followings Senge's personal interpretation, which is, in many respects, innovative, Systems Thinking can be viewed as one of the most powerful tools of knowledge and understanding, since it teaches people to devise coherent and sense-making models of our changing world, which are among the most effective in permitting us to improve our intelligence and construct our existence. Therefore, it is more than ever necessary for managers to adopt Systems Thinking, which is considered not only a technique but primarily a discipline for efficient and effective thinking, learning, communication and explanation with regard to the dynamics of the world.

This opinion is based on four premises:

a – intelligence is the ability to develop a system of coherent and meaningful models that allow us not only to survive in a world that is continually evolving but also to improve ourselves and make progress;

b – the most powerful and effective models are the systems ones, which view reality as a set of connected and dynamic parts forming a whole. An understanding of the connection between the parts and the whole and their dynamics is the fundamental characteristic of operational and creative intelligence;

c – the most interesting and useful connections among the elements that make up reality are not the linear ones – characterized by chains of causes and effects – but the circular ones, the feedbacks and loops, which make the elements not only connected but also interconnected, not only dynamic but also interactive. The only efficient thinking is Systems Thinking;

d – due to its intrinsic logic, which observes a world of variables and of variations, interconnected by causal loops that form a system, Systems Thinking considers dynamic systems

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of any kind in any field, building models of a world of incessant movement in continual transformation and evolution, allowing the systems thinker to describe and simulate the forces and interrelationships that shape the behaviour of the world (Mella, 2012) and to control them (Mella 2014).

It is natural to develop simulation techniques to try to numerically and graphically represent the values generated by the system under examination. When Systems Thinking constructs quantitative models to simulate the dynamics of systems, it approaches the logic of System Dynamics, which was developed by Jay Forrester in his fundamental book Industrial Dynamics (Forrester, 1961).

In a recent article, the founder of this discipline defines it in this way:

By "systems thinking" I mean the very popular process of talking about systems, agreeing that systems are important, and believing that intuition will lead to effective decisions. … "System dynamics" is a professional field that deals with the complexity of systems. System dynamics is the necessary foundation underlying effective thinking about systems. System dynamics deals with how things change through time, which covers most of what most people find important. System dynamics involves interpreting real life systems into computer simulation models that allow one to see how the structure and decision-making policies in a system create its behavior (Forrester, 1999: p. 1).

Simulations are not tools to predict the future. Rather, they are virtual worlds or microworlds in which managers can develop decision-making skills, conduct experiments, and play. Management flight simulators can be physical models, board games, or computer simulations. In systems with significant dynamic complexity, computer simulation will typically be needed (Sterman 2001, p. 21). In his excellent book, Peter Senge presents Systems Thinking in an intuitive way, but he does not provide the logical principles behind it. In his recent work, "Systems Thinking. Intelligence in action" (Springer, 2012), Piero Mella has tried to recognize the fundamental rules and principles as well as the cultural background of this discipline. He believes that the logical structure of systems thinking can be summarized in five fundamental rules, which the systems thinker must follow at all times.

1. Searching for Variables and Variations

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2. Searching for Causal Relationships
3. Travelling Between Parts and Wholes. Searching for Causal Chains
4. Building Closed Causal Chains. The Relevance of Loops
5. Defining Systems and Their External and Internal Boundaries

These rules represent in themselves a model for constructing models that use the logic of Systems Thinking and improve the "intelligence" of managers and organizations.

There is no limit to the complexity that can be represented by graphic models of Systems Thinking or simulated through system dynamics techniques. Of course, we should not be content only with Systems Thinking models, but for those with little time or resources to construct more sophisticated (though less immediate) models, the following proverb always applies: «Beati monoculi in terra coecorum»; that is, in a dynamic and complex world, blessed are those who, knowing how to construct Systems Thinking models, have at least one eye in a land of blind people.

Keywords: Systems Thinking. Intelligence, System dynamics.

REFERENCES

Andreff, W. (2006). Team sports and finance. In Andreff, W., Szymanski, S. (Eds.). *Handbook on the Economics of Sport*. Cheltenham, UK: Edward Elgar Publishing.

Capasso, A., Rossi, M. (2013). Systemic value and corporate governance. Exploring the case of professional football teams. *Business System Review*, 2(2): 216-2136.

Franck E. (2010). Private Firm, Public Corporation, or Members' Association: Governance Structures in European Football. *International Journal of Sports Finance*, 5(2): 108-127.

Beer, S. (1979). *The heart of enterprise*. London/New York: Wiley.

Beer, S. (1981). *Brain of the Firm* (2nd edition). London/New York: Wiley.

Beer, S. (1995). *Diagnosing the system For organizations*. London/New York: Wiley.

Forrester, J. W. (1961). *Industrial Dynamics*. Waltham, MA: Pegasus Communications.

Forrester, J. W. (1991). *System Dynamics and the Lessons of 35 Years*. Sloan School of Management, M.I.T. ftp://nyesgreenvalleyfarm.com/documents/sdintro/D-4224-4.pdf.

Forrester J. W. (1999). *System Dynamics: the Foundation Under Systems Thinking*. *SSM, MIT, Cambridge*. MA 02139; http://clexchange.org/ftp/documents/system-dynamics/SD2011-

ISBN: 9788890824258

01SDFoundationunderST.pdf

Hampden-Turner C. (1990). *Charting the Corporate Mind, from Dilemma to Strategy*. New York: The Free Press.

Ichijo, K., Nonaka, I. (2007). *Knowledge creation and management*. New York: Oxford University Press.

Mella, P. (2012). *Systems Thinking*. *Intelligence in action*. New York and Berlin: Springer Verlag.

Mella, P. (2014a). *The magic Ring*. New York and Berlin: Springer Verlag.

Mella, P. (2014b). The Pillars of Learning, Understanding, Studying and Explaining. *Creative Education*, 5: 1615-1628.

Richmond B. (1993). Systems Thinking: Critical Thinking Skills for the 1990s and Beyond. *System Dynamics Review*, 9(2): 113-133.

Senge, P. (2006). *The Fifth Discipline: The Art and Practice of the learning Organization* (2nd edition). NewYork: Doubleday/Currency.

Senge, P., Lannon-Kim, C. (1991). The Systems Thinking Approach. *The Systems Thinker Newsletter*, 2(5), Cambridge MA: Kendall Square.

Sterman J. D. (2000). *Business Dynamics: Systems Thinking and Modeling for a Complex World*. McGraw-Hill, New York.

Sterman, J. D. (2001). System Dynamics Modeling: Tools for Learning in a Complex World. *California Management Review*, 43(4):8-25.

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BOOK OF ABSTRACTS

Soft Methodology for Systemic and Viable Capitalization of an Organization driven by its Intangible Process Assets

Dr. Maria-Isabel Sanchez-Segura
Associate Professor, Department of Computer Science and Engineering, Carlos III University of Madrid, Spain
e-mail: misanche@inf.uc3m.es. (Corresponding author)

German-Lenin Dugarte-Peña
Researcher, Department of Computer Science and Engineering, Carlos III University of Madrid, Spain
e-mail: gdugarte@inf.uc3m.es

Dr. Fuensanta Medina-Dominguez
Associate Professor, Department of Computer Science and Engineering, Carlos III University of Madrid, Spain
e-mail: fmedina@inf.uc3m.es.

Abstract

This paper presents the combination of Checkland's soft systems methodology (SSM) (Checkland, 1993, 1999) for executing organizational interventions and Beer's viable system model (VSM) (Beer, 1985; Espejo & Gill, 1997; Espejo & Reyes, 2011; Johnson & Leydesdorff, 2013), with the aim to identify, classify, assess and characterize intangible process assets with respect to their quality and impact on strategic objectives and intellectual capital, as well as their value in the capacity of biomimetic constructs whose performance depends on a desired behaviour.

This methodology takes on board two formally recognized systemic approaches: the soft systems methodology (SSM) and the viable system model (VSM). SSM is a recognized systemic approach and was the starting point for the development of this intangible assets-driven organizational intervention. As argued by Checkland (Checkland, 1993, 1999), SSM is suitable for studying complex, unstructured systems, rich in complexity whose behaviour is highly

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dependent on the human factor. SSM has been chosen taking into account that it is more appropriate for dealing with complex systems and problems. The viable system model (VSM) is presented as a conceptual tool for understanding and (where appropriate) redesigning organizations, as well as for supporting change management (Espejo & Gill, 1997). We consider VSM in this study since it is usable as a tool for studying the systemic context of processes in organizations and for reconfiguring the use of their resources with the support of new technologies (Espejo & Reyes, 2011). Since the redesign of intangible process assets is an engineering task, the idea of taking the VSM as a reference is to make intangible assets smart, intelligent, viable and sustainable, that is, a VSM represented in the form of a human activities system that accomplishes the five essential functions for viability: implementation, co-ordination, control, intelligence and policy.

Our proposal

From a strategic viewpoint, traditional models have driven decisions within organizations disregarding knowledge. In an attempt to propose an alternative approach, this paper presents a complete methodology defined for the following stages:

- *Stage 1: Organizational immersion. Understand organizational practices, models, mind maps, and formal and informal technological, structural, geographical models, etc.*
- *Stage 2: Organizational expression. Understand an organization through an organizational immersion in order to identify perspectives about intangible assets, specify strategic objectives, and define the limitations, boundaries and dimensions of the organizational subsystem related to organizational intellectual capital.*
- *Stage 3: Root definitions. Define and name the relevant knowledge-driven subsystem in the form of a concise description of a human activity system which captures a particular point of view.*
- *Stage 4: Systemic design. Formally model in terms of the VSM and other systemic approaches the minimal activities needed to guarantee the achievability and veracity of the above root definitions. The VSM criteria for achieving viability (implementation, co-ordination, control, intelligence and policy), as well as other systemic inspired approaches —biomimicry,*

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autopoiesis, organic models, etc. (Espejo & Gill, 1997; Espejo & Reyes, 2011; Johnson & Leydesdorff, 2013)— are the key reference for this step, whereas the intellectual capital perspective (Castro, Delgado-Verde, Amores-Salvadó, & Navas-López, 2013; Dess, Lumpkin, & Taylor, 2004; Lerro, Iacobone, & Schiuma, 2012). is used for relating intangible assets and strategic goals

- *Stage 5: Checking of organizational model against the organization. This stage is intended to guarantee model representativeness of the real system, since decisions based on a highly representative model will be more effective and efficient during the implementation of desired changes. The tangible product of this stage is the characterization of identified process assets that affect the subsystem in question, as reported by Sanchez-Segura et al. (Sanchez-Segura, Dugarte-Peña, Medina-Dominguez, & Ruiz-Robles, 2016; Sanchez-Segura, Medina-Dominguez, & Ruiz-Robles, 2016).*
- *Stage 6: Definition of changes and desired states for the system (decision making). This stage defines policies, changes and practices promoting the achievement of the real strategic goals.*
- *Stage 7: Implementation of changes and policies. The identified and proposed changes are applied during this stage, again through organizational immersion. After changes are applied, the tendency is to iterate and apply the methodology again. Therefore, we are studying a better rather than a "perfect system".*

Keywords: Strategic management of intangible assets, intangible assets-driven systems thinking, intangible assets-driven soft systems, viable system model, soft systems methodology.

REFERENCES

Beer, S. (1985). *Diagnosing The System for Organizations*. John Wiley & Sons, Inc.

Castro, G. M., Delgado-Verde, M., Amores-Salvadó, J., & Navas-López, J. E. (2013). Linking human, technological, and relational assets to technological innovation: exploring a new approach. *Knowledge Management Research & Practice*, *11*, 123–132.

Checkland, P. (1993). *Systems thinking, systems practice*. Chichester: John Wiley & Sons, Inc.

Checkland, P. (1999). *Soft systems methodology in action : includes a 30-year retrospective*. John Wiley & Sons, Inc.

Dess, G. G., Lumpkin, G. T., & Taylor, M. L. (2004). Strategic Management : Creating

ISBN: 9788890824258

Competitive Advantages. In *Strategic Management : Text and Cases* (pp. 4–33). McGraw-Hill.

Espejo, R., & Gill, A. (1997). The viable system model as a framework for understanding organizations. *Phrontis Limited & © SYNCHO*, 1–6. Retrieved from http://www.syncho.com/pages/pdf/Introduction to Viable System Model RETG.pdf

Espejo, R., & Reyes, A. (2011). *Organizational Systems: Managing Complexity with the Viable System Model*. *Springer*. http://doi.org/10.1007/978-3-642-19109-1

Johnson, M. W., & Leydesdorff, L. (2013). Beer's Viable System Model and Luhmann's Communication Theory: Organizations from the Perspective of Meta-games. *Journal of Systems Research and Behavioural Science*, *282*(August 2013), 266–282. http://doi.org/10.1002/sres.2222

Lerro, A., Iacobone, F. A., & Schiuma, G. (2012). Knowledge assets assessment strategies: organizational value, processes, approaches and evaluation architectures. *Journal of Knowledge Management*, *16*(4), 563–575.

Sanchez-Segura, M.-I., Dugarte-Peña, G.-L., Medina-Dominguez, F., & Ruiz-Robles, A. (2016). A model of biomimetic process assets to simulate their impact on strategic goals. *Information Systems Frontiers*. http://doi.org/10.1007/s10796-016-9702-6

Sanchez-Segura, M.-I., Medina-Dominguez, F., & Ruiz-Robles, A. (2016). Uncovering hidden process assets: A case study. *Information Systems Frontiers*, 9. http://doi.org/10.1007/s10796-016-9622-5

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Organization and function. Next key factors in organization theory and practice

Steffen Roth
Associate Professor of Strategic Management, Department of Strategic Management, La Rochelle Business School, France
e-mail: roths@esc-larochelle.fr
Corresponding author

Abstract

As organization theorist and practitioners we want to design and use accurate models of both organizations and their environments. The dominant view is that this environment has been a capitalist society for more than 150 years now. Yet, there is also influential literature suggesting that contemporary society is dominated not so much by the economy, but rather by the political system or the mass media, whereas again other sources observe a return of religion. To determine the accuracy of these sometimes contradicting descriptions of society, we performed a literal electroencephalography of the largest available corpus of digitalized books, the Google Books corpus. As sightings of capitalist, mediatized, or de-/secularized societies imply functional differentiation, we run a Python program to extract a list of the 10000 most frequent words between 1800 and 2000 and manually scanned for words that refer to one of the function systems of society: political system, economy, science, art, religion, legal system, sport, health, education, and mass media. We then entered the 5 most frequent keywords per function system into the Google Ngram Viewer, the online graphing tool that charts annual word counts as found in the Google Books corpus (see Figure 1 for the results for the English language area). The results a) confirm that the importance of the political system, religion, economy, and mass media features significant change between 1800 and 2000 and b) suggest that visions of economized or capitalist societies are intellectual artefacts rather than appropriate descriptions of society.

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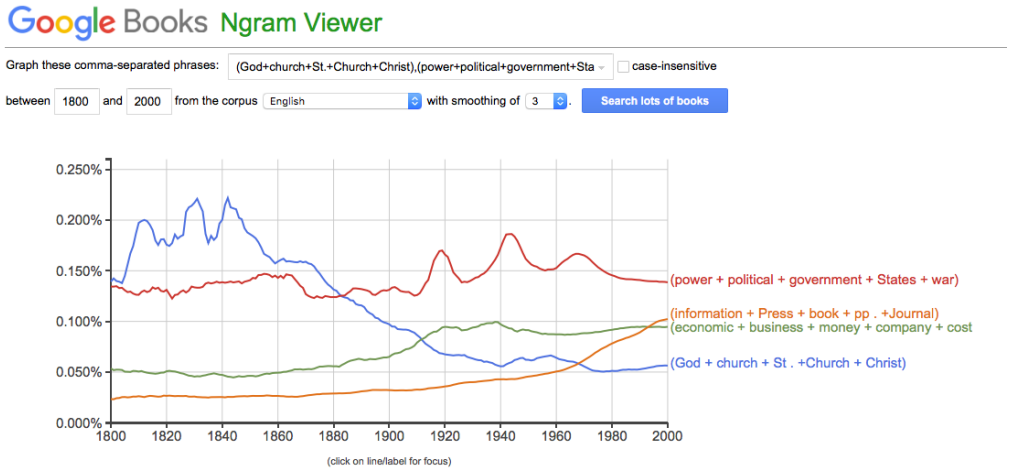

Figure 1: Word Frequency Shares of Selected Ngram Bundles in the English Language Google Books Corpus 2012 (source: own Google Ngram enquiry)

In this paper, we shall discuss the wide spectrum of implications that this new, inter-functional perspective on society has for the design of adequate models of organization as much as for the further development of management theory in fields as different as strategy, entrepreneurship, organizational behavior, and human resource management. To this end, we shall outline both potential future research axes and report on experiences with the development and application of first prototypical interfunctional management tools.

Keywords: Social differentiation; functional differentiation; management; organization; culturomics; Niklas Luhmann; Google Ngram Viewer.

REFERENCES

Roth, S. (2015) 'Foreword: Trends in functional differentiation', *Cybernetics and Human Knowing*, 22(2), 5-10.

Roth, S., Clark, C. and Berkel, J. (2016) 'The Fashionable Functions Reloaded. An Updated Google Ngram View of Trends in Functional Differentiation (1800-2000)' in Mesquita, A., ed.

ISBN: 9788890824258

Research Paradigms and Contemporary Perspectives on Human-Technology Interaction., Hershey: IGI-Global.

Roth, S. and Kaivo-oja, J. (2016) 'Is the future a political economy? Functional analysis of three leading foresight and futures studies journals', *Futures*, 81, 15-26. http://dx.doi.org/10.1016/j.futures.2015.10.002.

Roth, S. and Schütz, A. (2015) 'Ten Systems: Toward a Canon of Function Systems', *Cybernetics and Human Knowing*, 22(4), 11-31.

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BOOK OF ABSTRACTS

The Growth in Bureaucratic Governance and "Meaningless Jobs": How does Systems Thinking Respond?

Michael Charlton
Senior Lecturer – Business Systems
Sheffield Business School
Sheffield Hallam University
City Campus, Howard Street
Sheffield S1 1WB

e-mail m.charlton@shu.ac.uk:

Abstract

During the 1970s and the 1980s advances in technology, science and management thinking were reasonable grounds on which to anticipate that those of working age would increasingly spend more of their time on leisure pursuits than on paid work. A future was envisaged in which more time would be allocated to creative enterprise, to leisure and the life of the imagination. Whilst there have been some modest adjustments in time allocation from paid work to childcare and unpaid work, especially among men (Gimenez-Nadal & Sevilla, 2012), there is plenty of commentary suggesting that the exact opposite has occurred (Mason, 2016). Moreover there is a growing recognition that society has become increasingly bureaucratic and that the type of work we now perform in our daily lives comprises of seemingly meaningless, "make-work" tasks such as auditing, evaluation and assessment of proposals or people (Graeber, 2015); or the creation of documents and proposals for others to review. The auditing and assessment leads to more auditing and assessment and bureaucracy seems to grow. Graeber (2012), an anthropologist, has described this as the continual growth in pointless work and jobs which he unflatteringly describes as "bullshit jobs". In the current age of lean thinking and austerity, growth in jobs that appear to offer little value is puzzling in the extreme (Glaser, 2014).

But how does systems theory and systems thinking explain this phenomenon? Do systems dynamicists (e.g. David Lane's work in Munro 2011) merely chalk this up as yet another example

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of human folly by well-meaning managers who, in creating administrative systems of control, have unknowingly created unintended consequences? Do organizational cyberneticians (e.g. Beer 1979) and organizational coherence and trajectory researchers (e.g. Yolles, 2016) detect a more- or less straightforward case of bureaucratic autopoiesis or pathology, something which might be avoided by the careful application of cybernetic principles to the design of organizations? Has "Soft Systems thinking" (e.g. Checkland & Poulter, 2006; Eden & Ackermann, 2013) unwittingly produced a cadre of managers who have embraced participation only to create overelaborate systems of control that ignore Checkland's (2006) criteria of "efficiency, efficacy and effectiveness"? Or is the phenomenon better explained by critical systems thinking (e.g. Jackson 2003, Midgley, 2000) who may detect in the new bureaucracy thinly disguised forms of coercion which may limit the opportunities we have to collaboratively re-design our systems of governance.

The aim of the paper is to contribute to the conversation on modern bureaucracy and the tendency of private and public organizations to proliferate seemingly meaningless work tasks that appear to add little value. A conversation stimulated in the popular imagination by writers like Graeber (2015) and of concern to management systems researchers and practitioners. If we take the phenomenon at face value - and very few of us working in universities, the police, healthcare, or large private sector organizations would question the premise - we need to ask how systems thinking can explain bureaucracy's growth and perhaps shed light on how its more pernicious forms can be resisted.

In order to address these questions and others the research uses a case-study approach examining a typical departmental quality assurance system in a Higher Education setting. The purpose of the quality system is to assure the quality and standards of the university's academic provision. The main features of the system are typical of most higher education organizations and include peer review (external and internal), self- review, form filling (electronically), auditing and procedures for modification of provision with numerous boards and officers with oversight responsibilities. Many features of the system are wholly endorsed by users as examples of good practice, but other features are seen as questionable, burdensome and in some cases baffling. Using documentary analysis and semi-structured interviews the research reports how operational managers responsible for the operation of the quality system seek accommodation with it. There

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is tacit acknowledgement that the system's burdens can be lessened by clearer communication of responsibilities and deadlines for compliance. The research makes some tentative conclusions about the range of metaphors which may be appropriate for systems practitioners to consider when seeking accommodation with, and change in, highly bureaucratic situations.

Keywords: Systems thinking; systems practice; bureaucracy; work; governance; quality systems; metaphor.

REFERENCES

Beer, S. (1979). *The Heart of Enterprise* (Vol. 2). John Wiley & Sons.

Checkland, P., & Poulter, J. (2006). *Learning for action: a short definitive account of soft systems methodology and its use, for practitioners, teachers and students*. John Wiley and Sons Ltd.

Eden, C., & Ackermann, F. (2013). *Making strategy: The journey of strategic management*. Sage.

Gimenez-Nadal, J. I., & Sevilla, A. (2012). Trends in time allocation: A cross-country analysis. European Economic Review, 56(6), 1338-1359.

Graeber, D. (2013). On the phenomenon of bullshit jobs. Strike! Magazine, (2013), 10-11.

Graeber, D. (2015). *The Utopia of rules: On technology, stupidity, and the secret joys of bureaucracy*. Melville House.

Glaser, E. (2014). Beyond bullshit jobs. Soundings, 57(57), 82-94.

Jackson, M. C. (2003). *Systems thinking: Creative holism for managers* (p. 378). Chichester: Wiley.

Mason, P. (2016). *Postcapitalism: A guide to our future*. Macmillan.

Midgley, G. (2000). *Systemic intervention*. . Springer Us.

Munro, E. (2011). The Munro review of child protection: Final report-a child-centred approach (Vol. 8062). The Stationery Office.Lane

Yolles, M. (2016). Understanding Bureaucracies

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BOOK OF ABSTRACTS

Soft Skills and Job Opportunities of Migrants: Systemic Relationships in the Labor Market

Roland Bardy,
Executive Professor of Management, Lutgert College of Business, Florida Gulf Coast University
Corresponding author
e-mail: rbardy@t-online.de

Arthur Rubens,
Associate Professor of Management, Lutgert College of Business, Florida Gulf Coast University
e-mail: arubens@fgcu.edu

Abstract

Organizations and companies throughout the world are affected by dramatic shifts in population due to political and economic events worldwide. Most recently, one of the most powerful shifts is the presence of migrants entering the labor market, which is seen most notably in Europe. Migrants bring diverse cultural backgrounds, and in some cases defined technological skills into the business environment, but the biggest difference from the local population is their attitudes and behavior. Most notably for the labor market, there are distinguished diversities in the soft skills that they bring in the workplace environment.

The skills of migrants, the skills of existing workers, and the characteristics of the host economy are critical factors that impact the labor market in any country. Studying the effects is a critical area of research with much of the research on this topic specific to time and place. There are studies on the UK which looked into the wage effects of immigration and the impact on unemployment (Ruhs and Vargas-Silva 2011). A study on Denmark found that an increase in the supply of refugee-country immigrants pushed less educated native workers (especially the young and low-tenured ones) to pursue less manual-intensive occupations. As a result, immigration had positive effects on native unskilled wages, employment and occupational mobility (Foged and

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Peri 2015). This has led to critical assessments of the skills brought in by migrants who have a higher level of education. This is occurring to quite an extent in present-day immigration to Europe.

This paper draws on a study performed by the authors on African nationals with an academic background and who study, live and work in Germany. They were asked to complete an online questionnaire on management soft skills. The results revealed that the African migrants appear to be quite aware of the specific soft skills they owe to their cultural background, which ultimately might make them well equipped for better job opportunities when they actively apply them in their work environment. In continuance, the paper contrasts those findings with the results of a large European survey of migrants' soft skills that was conducted with companies' heads, personnel managers and representatives of business associations. Mirroring the results of both studies provides an insight into the extent in which the opinions on migrants' soft skills align and where they differ. This leads to the conclusion that while migrants' skills enhance their ability to enter into the labor market, the skills also shape the market by creating niches for employment and this in turn changes how migrants deploy their skills.

From a theoretical perspective, the two sets (of data but of interviewees as well) represent two distinct agglomerations of elements that are interrelated within each set, and they are also relating the sets to each other. This embeds a variety of systems-thinking constructs. Co-creation is one, and it regards to building a new set of information from not only the observations on skills offered and required but also from the developments that are triggered when offer and demand meet. One other is coalescing equi-finality and multi-finality to arrive at a balance between needs of job-seekers and the job offers that can be satisfied short-term or for which long-term solutions are required. A third one is conjoining self-organization and relationality where skills development and labor market conditions enter into a systemic relation. For applying this concept a parallel can be drawn to the innovation deployment projects that are run within the European Commission's Framework Programs (Kapsali 2011). With regards to generating new opportunities in the job market, a systems-thinking interpretation would be that of an auto-poietic system (the development of skills) that interacts with the environment (the job market) and processes self-reference and other-reference. The paper evaluates the applicability of these concepts to the phenomenon of migrants in the labor market.

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Keywords: Sift Skills, Migrants; Labor Market; Systemic Relationships; Co-creation

REFERENCES

Foged, M. and Peri, G., 2015, *Immigrants' Effect on Native Workers: New Analysis on Longitudinal Data*. IZA Discussion Papers, No. 8961. Bonn, Germany: Institute for the Study of Labor (IZA).

Kapsali, M. (2011). How to implement innovation policies through projects successfully. *Technovation, 31*(12), 615-626.

Ruhs, M., and Vargas-Silva, C. (2011). *The labour market effects of immigration*. Oxford: The Migration Observatory at the University of Oxford Briefing.

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A proposed model for new Socioeconomic Environmental Dynamics project

Paolo Mazzara

Member of SYDIC / Sales & Proposals Mgr. @ Kinetics Technology SpA, Maire Tecnimont group, Italy e-mail: Paul.Mazzara@gmail.com

Abstract

1- Problem setting

While we are actively participating to the global mainstream brainstorming about the "Environmental problem of Sustainability" we may also feel disarmed by the huge figures of the "Climate Change" ("Limits to growth", emissions, industrial and social costs, "Global warming") along with a loss of the sense for the human development capability. We are talking here of 15-20 years ahead of spends of:

- 2,5 trillions USD for Public/Private investments in Smart Grids
- 2 billions USD in private cost for replacement of vehicles and repayment,
- 8 trillions USD private investments for CO2 abatement recharged on citizens utility costs
- 2 billions for afforestation expenses to enhance the CO2 sequestration and compensate agricultural production losses
- more than 100 billions USD in order to achieve a commercially viable Nuclear Fusion,
- more than 25 trillion USD worth of deals for M&A prospects of companies,
- more than 10 trillion USD for military expenditure being foreseen

with a World population growth toward 8,5 billions with increasing consumptions there is spend of more than 150 trillions. We perceive the Sustainability problem as having some kind of relationship with the Distribution of Income and Wealth and the reallocation of capital.

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The purpose of this work is therefore to build a systemic overall problem solving model at a high hierarchical level of knowledge and at a "governance" leverage (rather than "policy" as for most of the current macro-models). This will aim to unveil the current world's interconnections among the main factors that influence human behavior toward the Sustainability issues.

We propose here a new project defined "SEE Dynamics" ("Socio Economic Environmental Dynamics"). This will start with a complex Causal Loop Diagramming (CLD) System design, to demonstrate what we see as the major cause- effect-feedback links among:

- Entrepreneurial / Industrial (Private/public) subsystems,
- Social/Institutional subsystems
- Environmental (Natural/Health) subsystems

The purpose here is to orientate an overall System upgrading towards the Sustainability objectives.

The current status of the "SEE Dynamics" project is a so called "Feasibility Design" in which, a qualitative model is built in order to establish knowledge on the pattern of the problem, by capturing the existing knowledge with a creative design. After this the foreseen stages, will then be the "Basic Design" for the SD model (kernel) and the "Detail Design" for the auxiliary SD sub- models.

2- Context

The Problem context is built up from several scientific main works in the following areas:

- Economy and Social Sciences (about the crisis of Capitalism, Distribution of Income, Customer Choice),
- Environmental sciences,
- Political Economy (about Sustainability, theory of Shared Ownership and modern Corporatism)
- Industrial transformation (such as reports on "Smart Grids", "Carbon Capture" studies, programs and institutional statistics).

The sum of the above does not allow a holistic vision, but the "interference" among them, exalting the peaks of scientific knowledge while depleting the valleys due to merely emotional

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visions) allows us to capture the recurring interconnections among the main indisputable agents of this problem, so, unveiling the insight on relevant Causal loops, by which we infer our solution of the Problem.

3- State of art

Several studies and articles about the related aspects of this problem will be adopted for this work, ranging from the economic main editorials and neoclassical theories though to the National Geographic Greendex surveys on the Consumer Choice for Environment. Reference is also made to the Environmental Kusnetz curve (by David I. Stern) critic essay on the inverse U-shaped Income-Pollution curve. The mostly criticized Capitalistic trends for economic bubbles and financial crisis, along with loss of employment, have been found in connection with the Distribution of Income and Consumer Choice theories whilst "Environmental policy" is being claimed by governmental agencies such as DEFRA (UK) and this will drive society toward an economic equilibrium in Income and the "Natural Capital" (by using the Kusznet curve). Currently, "Income" and "Distribution" are found as the first milestones of the Problem definition.

Most of the specific SD models on Sustainability are designed to a specific demonstration that our resources are limited, though there are excellent projective dynamic models for Energy policy making; we believe that a general SD model for the proactive Sustainability problem solving should be done

(It is noted that the "World 3" update of the 1990's already substituted the Natural Resources limitation paradigm by the overall Environmental depletion scenario)..

4- A new systemic framework

The adopted approach to gathering knowledge has been established with reference to the Data mining patterns method in Computer Sciences and the Theory of Knowledge. It is envisaged that we will use:

- the availability of numerous "patterns" of statistical data and predictions among the studies in Ecology "metrics" and policy making,
- the large extent of economic analysis on Capitalism VS Ecology

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- the numerous Dystopia essays on the "Climate Change" as increasingly flourishing into our global cultural envelop.

We have been inspired by the article "Is that true…? Thoughts on the epistemology of patterns" (By Christian. Khols - Knowledge Media Research Center of Tubinga and Sfefanie Panke- University of Bielefeld) and have a personal firm commitment to Karl Popper's Falsifiability theory of scientific knowledge, in which: [..The objective of scientific inquiry is to create knowledge. Knowledge, to-know-that and to-know- how, can be defined as justified beliefs about facts, models and theories about the world...Likewise, a pattern expresses generative rules (laws or regularities) for the design of artifacts].

The aim of this Project is to design the Structure of the Capitalistic-Socio-Environmental system which will encompasses the main environmentally relevant forces influencing the Behavior, shown up by means of the Systemic Archetypes (P. Senge) by showing a systemic leverage toward the aimed global behavior targeted to Sustainability.

This aim will also include:

- A pattern that describes the form of recurrent solutions and their contexts of applications, (the chosen causal relationships among auxiliary variables together with the Stock & Flow abstraction has been elected among recurrent essays found in the similar (non-holistic neither systemic) context
- A pattern explains the reason for this fitness in terms of the forces, (This is clearly identified within CLDs)
- A pattern is a three part rule consisting of IF X (context) THEN Z (solution) BECAUSE of Y (problem as a network of interrelated forces). (The "Deductive principle" has been widely applied to the Causal loops definition and no inferred Induction has been proposed, in accordance with Popper principle of Falsifiability of a scientific theory, to which the Author is committed)

In line with the intended purpose, a necessary human interaction allows us to focus on useful patterns to define this Problem such as the System Structure centralization on the Stocks of Capital, from/to which cashing in on the flows. The three sources of interactions are:

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- The Financial, which is being represented as the Overall worth of enterprises both private and public and, as well the intensity of it under certain causal actions (as a Fuzzy Logic
- The Human, which is being represented as the stock of Wages, salaries and training invested by the enterprises for their personnel and management. This being the main contribution to the economic Consumer growth and the growth of Purchasing power for our capitalistic markets, in general.
- The Environmental, which is being represented as the Stock of investments in RND, payment of eco-fines, material and immaterial capitalization. This gives the Sustainable status of the Environment as given by current scientific perspectives.

As per the Khols and Panke lecture mentioned above, a pattern should not report on surface properties but rather "capture hidden structure" at a "suitably general level". The CLD model has therefore been structured at a high hierarchical level of knowledge for the separate disciplines (Economy, Industrial Business, Environmental policies, Social sciences and Political economy science). It has been centered on Capital Stocks in order to unveil the holistic and systemic interconnections. In the presented CLD qualitative model, a number of Causal Loops around each of the three Stocks & Flows main interactions, are drawn from the basic principles of capitalist economy, (regardless of the reductionist field of belonging to either micro-economy or macro- economy theories), but as perceived from the mainstream patterns data mining i.e. ("Farewell to objectivity" H. von Foerster, System research-1996).

The emerging systemic archetypes from the so built Structure are described below: (ref. to the Scheme at end)

Success To Successful

In the the two "Entrepreneurial" reinforcing loops R1 and R2:

- **R1** (Henry Ford paradigm- its notion that one must pay workers enough to be consumers of its own production!)
- **R2** (The Invisible Hand paradigm disappearance/a wishful thinking dated 1775 by the master Adam Smith then in Neoclassical economy (Lassaiz-Faire) the idea of

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trade and market exchange automatically channeling self-interest toward socially &environmentally desirable ends. Within this causal dynamics, we envisage to find a System Archetype "Success to Successful" since we have a competition between the consumer growth and the reduction of concurrence, being the resource (sales) allocated by R1 to R2)

Growth and Underinvestment

This archetype is found among the "Entrepreneurial" and the "Environmental" sub-systems: the Financial Reinforcement by Growth in market share and Oligopolistic Power (R6) while reducing by lobbying the Emissions Gap, is triggering two Environmental Balancing loops, being the consumption-pollution loops to slow accumulation of Finance to meet the Environmental Targets (by Eco Investments and Eco fines)

Accidental Adversaries

This critical archetype is found among the reinforcing loops of socio-economy (R1) and in Environmental-Finance (R7) as the reinforcing action of Consumer Growth shifts from Society to Environment and, vice versa. The savings from social cultural growth in efficiency (of which Environmental Capital avails) are consequential benefits from Financial Capital to Human Capital. The overall Balancing loop B7 causes the lack of success by both, while distributing the Wealth distribution among Society and Environment.

The model proposes a Leverage-Reinforcing Loop to sustain the welfare distribution of income: but the adding of James Meade Loops seems to disengage the two Accidental Adversaries as follows:

- by adding Institutional support to the Employment Rate to sustain the economy and
- "Educational Level" toward sustainable goals
- by adding an entrepreneurial leverage to the end users of the Environmental Capital

5- Potential impact

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It all appears to look like a Pareto Optimality problem of allocation of Value (however we will maintain with systemic non-reductionist approaches), the system behavior moves from the capitalistic entrepreneurial maximization of profit, to the widest distribution with a maximum possible employment; while meeting the highest possible environmental protection and investments level.

When posed under systemic light, this model, aims to analyze the SEE System drift under current Capitalist socio-economic drivers, and its homeostatic control, by means of the James Meade political-economic influence (such as higher employment and distribution at higher employer's ownership sharing). This keeps the three subsystems of Finance, Society and Environment at the best distribution of wealth, distributing all cashes from the three Stocks, when executing a suitable a dynamic simulation.

The Homeostatic Principle of this System, is deduced from its similarity to a living organism in equilibrium, whose physiologic parameters are kept at the optimal level, by the action of a feedback control mechanism. (This is as found in "Feedback control and the concept of Homeostasis" by D.J. Schneck –Dept. of Engineering Science and Mechanics, Virginia Polytechnic Institute and State University. 1986). The SD task, starts from taking into account the Forrester/Sterman lessons, passes from a ST causal map to a SD simulation model. "Even if our cognitive maps of causal structure were perfect, learning, especially double-loop learning, would still be difficult. To use a mental model to design a new strategy or organization we must make inferences about the consequences of decision rules that have never been tried and for which we have no data. To do so requires intuitive solution of high-order nonlinear differential equations, a task far exceeding human cognitive capabilities in all but the simplest systems" (Forrester 1971a; Simon 1982).

It is envisaged to find dynamic behaviors of the type "Growth and overshoot" for Capital Financial and "Overshoot and collapse" for Capital Environmental and Capital Human, while the trends should become of the "Oscillation" type when applying the James Meade homeostatic control mechanism. (ref. Sterman "Business Dynamics").

The execution aim is to build a SD project for the SEE model elaboration, by using an international staff including, in particular, contributors from UK (from where most of the suitable

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economic models were sourced and useful economic/environmental studies as well) and from the USA, (the leading capitalistic country and leading policy making source for Environmental targets and source of agricultural dynamics analysis that is a specific area of deep concern regarding the future Sustainability).

The SEE model, can be seen as a kernel application to be simulated and connected to other sub-models running around the three Capital Stocks for future continuous developments:

- An Agricultural-Environmental (AE) dynamics,
- A Transportation Environmental (TE) Dynamics (connected to the Environmental Capital Stock area),
- a Socio- Environmental (SE) dynamics (Connected to the Customer Choice area of the Human Capital Stock)
- a Shared Entrepreneurial Ownership (SEO) Dynamics, connected to the Financial Capital Stock area

The Kernel (SEE) is a way to evolve the World 3 SD approach toward a World 4 as shown

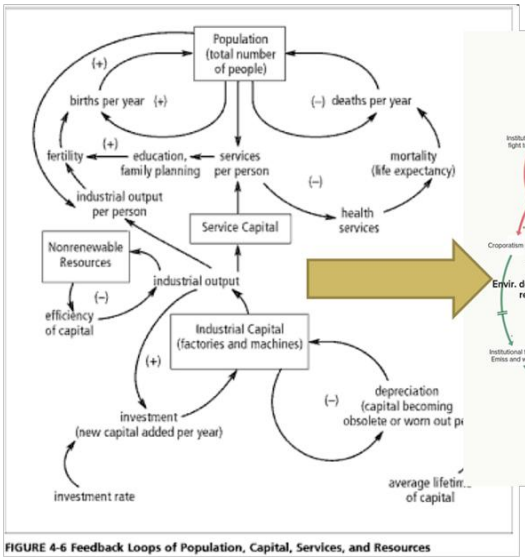
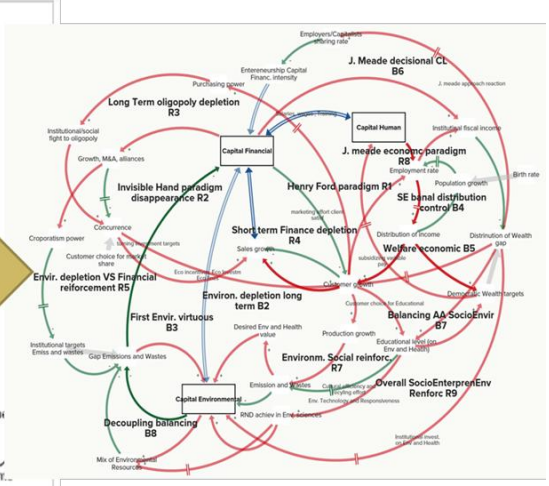


FIGURE 4-6 Feedback Loops of Population, Capital, Services, and Resources



Kumu® model can be found at:

https://cambriano.kumu.io/the-cambrian-age-of-a-socioeconomical-sustainability

Keywords: Stock & Flow, System Archetype, Data Mining Patterns, Deductive Principle, Financial/Human/Environmental Capital, Distribution of Income and Wealth, Homeostatic Principle, Environmental Kusnetz Curve (EKC), Discriminating Labour-Capital Partnersip (DLCP)

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BOOK OF ABSTRACTS

Risk Management in a Complex Environment: a Model Based Systemic Approach

Giovanni Paolo Sellitto
Independent Scholar
e-mail: <mailto:gogiampaolo@gmail.com>

Abstract

According risk management vocabulary, risk is defined as the effect of uncertainty on objectives (ISO 31000 2009). This definition takes into account that we live in an uncertain world and therefore there is always the chance that the outcomes of our actions deviate (positively or negatively) from the plans. The distinction between "risk" and "uncertainty " is that, while in the case of uncertainty we have only a lack of information on the expected outcomes, in the case of risk we expect a quantitative evaluation of the unexpected deviation.

In order to manage risk effectively, ISO 31000 and other relevant frameworks propose the adoption of a management strategy based on a process approach. Even if it is based on the Deming Cycle and thus leaves space for short and mid term steering, this analytic and reductionist strategy adopts a managerial and operational point of view. One of the implicit assumptions is the relative simplicity and stability of the internal environment, where the managers are in control ("own") of the processes that make up their organization and where the interaction between these processes are well known and stable. Moreover, the organization is supposed to operate in an observable and relatively deterministic, stable and controllable external environment, where the managers can still have a good share of control on entities that are located outside their organization's boundaries.

Not all of these assumptions are realistic, e.g.:

- ✓ when we adopt the point of view of an insurance company or of a policy maker, which have limited control (and possibly information) on the internal dynamics of the organizations;

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- ✓ in the case of a complex environment, where most of the processes are interdependent and connected and where any intervention on a process can affect other processes as well;
- ✓ when some part of the process is not observable, or tacit knowledge is a key success factor;
- ✓ in the case where the processes and the environment evolve at a rapid pace, thus requiring a constant update of the models used to evaluate risk and of the controls as well;

These are the most frequent conditions in the real world, where we do not have a single process owner, but a multiplicity of agents that collaborate or fight to reach some common objective and they do not follow rules, but act strategically under a common framework of policies (if we are lucky).

In order to cope effectively with uncertainty and risk under these latter conditions, we must adopt a systemic approach and a smart, model based framework. This is needed even more in a connected environment, like our contemporary society, where everything can interact with everything else, even if far apart. In this context, the adoption of a multidisciplinary point of view is of paramount importance. Through the exploitation of now well-established analytic tools like system dynamics, scenario analysis, soft system methodology, control theory, coupled with the most recent technologies, like Agent Based Models, big data and machine learning, we can envision an effective risk management framework. The last two technological instruments, i.e. big data and machine learning are the last buzzwords in the managerial world when faced with the governance of complex systems, but they are bound to fail and actually, they show their limitation, if we do not scaffold their use with powerful models.

When we combine data about processes and machine learning with a model based approach, we enter into the realm of process mining, a discipline that is recently gaining ground. However, we must add a soft system approach, like CATWOE or a similar methodology, to take into account by design all the stakeholders and to combine the different point of views without a reduction of the complexity during the modeling process. We should also adopt an agile approach in the update and re-vision of the process representation and of the governance rules.

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Through the combination of all these tools and methodologies, especially Agent Based Modeling and simulations and the contribution of all those involved in the internal and external environment of the system under risk evaluation, we can detect and manage "HILF" (high impact, low frequency) events and combinations of events that can lead to dramatic consequences.

Usually managers are unable to cope with this type of rare and complex risk – they prefer to neglect the existence of these events in their daily routines, simply to give themselves the feeling of having everything under control. The recent emergence of such rare but catastrophic events, like terroristic attacks, flooding, earthquakes, with their unforeseen consequences shows how quickly generally accepted model assumptions and business practices can be overtaken by the complexity of reality.

We need models to predict the outcomes and to control each single process, but only through the adoption of a systemic approach, we can ensure that our models of the system are constantly up-to-date and adherent to the current reality. Only up-to-date models can help us in the task of processing the data and the information coming from the internal and external environment in order to react to changes and lead the system towards the objectives. In this manner, we are establishing a kind of meta-control that will guide the managers through the design of an effective risk management framework.

Through the adoption of a systemic approach, we can go beyond the simple quantitative models, taking into account the "human factor" and evaluating the possible options for action beyond established control frameworks.

Keywords: risk-management, system thinking, complex systems, system dynamics.Complex Adaptive Systems, Model Based Governance, Model Based Risk-Analysis.

REFERENCES

Espejo, R. & Reyes, A. (2011) "Organizational Systems- Managing Complexity with the Viable System Model", Springer;

Schwaninger, M. (2011) "Intelligent Organizations Powerful Models for Systemic Management" Springer;

ISBN: 9788890824258

Senge, P.M. (2006) "The Fifth Discipline: The Art & Practice of the Learning Organization" New York, Doubleday;

Small, A., & Wainwright, D. (2014). SSM and technology management: Developing multimethodology through practice. European Journal of Operational Research, 233(3), 660-673;

Sterman, J.D. (2013). Business Dynamics. System Thinking and Modeling for a Complex World. New Delhi. McGraw Hill Education;

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Towards a systemic perspective of the sustainable development goals through the Brazilian case

Omar Sacilotto Donaires,
Master Student of School of Economics, Business Administration and Accounting at Ribeirão Preto of University of Sao Paulo.
Email: omardonaires@gmail.com

Luciana Oranges Cezarino
Assistant Professor of Faculty of Business and Management of Federal University of Uberlandia.
e-mail: lcezarino@gmail.com - Corresponding author

Adriana Cristina Ferreira Caldana
Assistant Professor of School of Economics, Business Administration and Accounting at Ribeirão Preto of University of Sao Paulo.
Email: adrianacaldana@gmail.com

Lara Bartocci Liboni
Assistant Professor of School of Economics, Business Administration and Accounting at Ribeirão Preto of University of Sao Paulo.
Email: lara.liboni@gmail.com

Abstract

Schwaninger (2015) argues that the viability of humanity in the long term depends upon its ability to organize for sustainability. He further proposes that "that every viable system is sustainable, but that a sustainable system is not necessarily viable".

Beer carefully explains that the recursive logic, which the viable system is based on, consists of a process that runs through all levels of organization and admits no limits. Managers must thus be extremely wary of cutting short that process by just saying, for instance, "my responsibility ends here". Such attitude on the part of managers at all levels of recursion explains why there are, as Beer adds, "dust bowls, pollution, city decay, starvation, violence, social revolution, and international warfare" (1979, p. 312).

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On the world point of view, the efforts to define a global agenda to deal with sustainability challenges can be traced back to the United Nations Conference on the Human Environment in 1972, in Stockholm, Sweden and after a decade on the Brundtland Report in 1987. Important meetings were managed since like Rio +20 that developed the Millennium Goals. Finally, the 2030 Agenda for Sustainable Development consists of 17 Sustainable Development Goals (SDGs) and 169 associated targets. The SDG focus on five themes: people, planet, prosperity, peace, and partnership. The discussion calls the attention to the importance of having a systems perspective to sustainability. In particular, the improvements that are expected at a global level depend on efforts undertaken at lower levels of recursion. Under that perspective, the results that can be observed or obtained at a global level can be understood as emergent properties that result from the system dynamics at lower levels. If the lower levels, in relation to a certain level of recursion, are not self-organizing for sustainability, how can results at that level be taken as consistent or sustainable?

To try to answer such question the aim of this paper to analyze the progress on SDGs under a systems thinking perspective. A three parts method was developed. The first part of the study consisted in elaborating a systems model relating the SDGs.

In the first phase, a causal loop diagram relating the SDGs is used as the conceptual system model. A causal loop diagram (CLD) is a set of variables connected by arrows that represent the causal relationships among them, originally elaborated by Schwaninger (2015). The second part of the study consisted in a multivariate data analysis in order to calculate the correlation matrix of SDG related data series. The data series for statistical analysis was got from The World Bank's primary collection of World Development Indicators (WDIs). The World Bank's experts selected WDIs for each of the 17 SDGs. That mapping of WDIs onto SDG was used to compose indexes for the SDGs by means of multivariate data analysis by programming R software. The third part of the study consisted in comparing the causal relationship diagram with the correlation matrix created in the two previous parts of the study, respectively.

The correlation matrix indicates a strong correlation among the first four SDGs. This is in agreement with the expectations expressed in ideal system model in the form of a causal loop diagram.

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SDG 12 (Responsible production and consumption) has negative correlation with almost all other SDG indicators. This is not the expected behavior. A strong positive correlation with SDG 4, "quality education", was expected. Negative correlation was expected in the case of SDG 9 (Industry, innovation and infrastructure).

The matrix also shows positive correlation between SDG 9 and the majority of the SDGs, while negative correlations with many of them was expected. This points to a careful analysis of the WDIs that compose that SDG in order to check if the model is consistent. If it proves to be consistent, then, further investigation is required. According to the matrix, SDG 17 (partnership for the goals) has negative or weak correlation with almost all other variables, while strong positive correlations with SDG 4 (quality education), SDG 3 (good health and well-being), SDG 11 (sustainable cities and communities) and SDG 9 (industry, innovation and infrastructure) were expected.

In conclusion, by using the correlations among temporal data series, it is assumed that the transients that are typical in the dynamic behavior of systems – such as undershoot, overshoot and oscillations – do not affect significantly the correlations. That is an assumption that requires further investigation. The WDIs used to calculate indexes for the SDGs not always have a direct relation to the semantics of the SDG. In some cases, the WDI had the opposite meaning. SDG 1, for instance, regards "no poverty", while the corresponding WDI measures poverty. In these cases, the signals of the values were changed, so as to create a direct correspondence between the WDI and the associated SDG. The semantics of each WDI and how it relates to the semantics of the corresponding SDG requires further analysis.

In order to enable the calculation of the correlation matrix, the data series are not allowed to have missing values. Some of the WDI data series had too many missing value, and had to be eliminated. This unfortunately reduced the variability of the original data. The impact of that also requires further investigation. Missing values in the remaining data series had to be calculated by means of interpolation or extrapolation. There are alternative algorithms to perform that. The impact of interpolation and extrapolation of missing values on the study, as well as the pros and cons of different algorithms, require investigation.

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The fact that the data analysis was programmed in R language allows other countries or even entire continents for which the WDIs are available to be analyzed just by running the program. In this way, the study can be repeated for different countries and for continents.

The methodology suggested in this work admit variations. The system model and the correlation matrix can include the targets of the SDGs, can be based on WDIs, or can be bases on sources of SDG indexes other than the WDIs.

Keywords: Sustainable Development, Recursivity, World Development Indicators, Sustainable Development Goals, Multivariate Analysis**.**

REFERENCES

Beer, S. (1979). The Heart of Enterprise. Chichester: Wiley.

Beer, S. (1985). Diagnosing the System for Organizations. Chichester: Wiley.

Brundtland, G. H. (1987). Our Common Future. The World Commission on Environment and Development. Oxford: Oxford University Press.

Checkland, P. B. (1981). Systems Thinking, Systems Practice. Chichester: Wiley.

Checkland, P. B. (2000). Soft Systems Methodology: A Thirty Year Retrospective. Systems Research and Behavioural Science, 17(S1), S11-S58.

Espinosa, A., Harnden, R., Walker, J. (2008). A complexity approach to sustainability – Stafford Beer revisited. European Journal of Operational Research, 187, 636–651.

Espinosa, A., Walker, J. (2013). Complexity management in practice: A Viable System Model intervention in an Irish eco-community. European Journal of Operational Research, 225, 118–129.

Forrester, J. W. (1961). Industrial dynamics. Waltham, MA: Pegasus Communications.

Forrester, J. W. (1969). Urban Dynamics. Pegasus Communications.

Forrester, J. W. (1971). World Dynamics. Wright-Allen Press.

Johnson, R. A., Wichern, D. W. (2007). Applied Multivariate Statistical Analysis. Sixth Edition. New Jersey: Pearson.

Nunes, B., Alamino, R. C., Shaw, D., Bennett, D. (2016) Modelling sustainability performance to achieve absolute reductions in socio-ecological systems. Journal of Cleaner Production. 132, 32-44

Porter, M. E. (1985). Competitive Advantage: Creating and Sustaining Superior Performance. New York: Free Press.

Schwaninger, M (2015). Organizing for sustainability: a cybernetic concept for sustainable renewal. Kybernetes. 44(6/7), 935-954.

ISBN: 9788890824258

Sterman, John D. (2000). Business Dynamics: Systems thinking and modeling for a complex world. McGraw Hill.

Sterman, J. D. (2000). Business Dynamics: Systems thinking and modeling for a complex world. Boston: Irwin/McGraw-Hill.

Taisch, M., Stahl, B., May, G. Sustainability in Manufacturing Strategy Deployment. 12th Global Conference on Sustainable Manufacturing. Procedia CIRP 26 (2015) 635 – 640

Ulrich, W. (1994). Critical Heuristics of Social Planning: A New Approach to Practical Philosophy. Bern: Haupt, 1983. Chichester: Wiley.

Ulrich, W. (2002). Critical Systems Heuristics. In H. G. Daellenbach & R. L Flood. The Informed Student Guide to Management Science. (pp. 72s). London: Thomson Learning.

Ulrich, W., & Reynolds, M. (2010) Critical systems heuristics. In M. Reynolds & S. Holwell (Eds.). Systems Approaches to Managing Change: A Practical Guide. (pp. 243-292) London: Springer.

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BOOK OF ABSTRACTS

Corporate Social Responsibility Disclosure in the Banking System

Ivan Nania
PhD Student Faculty of Economics, University of Messina, Italy.
e-mail: inania@unime.it
Corresponding author

Davide Di Fatta
PhD Student Faculty of Economics, University of Messina, Italy.
e-mail: ddifatta@unime.it

Abstract

According to the World Bank, "Corporate Social Responsibility is the commitment of businesses to contribute to sustainable economic development by working with employees, their families, the local community and society at large improve their lives in ways that are good for business and for development" (Starks, 2009).

Financial Institutions, banks in particular, came under high pressure during the financial crisis to take a long-term view of their stakeholder interests (Matten, 2006; Money and Schepers, 2007; Grove et al., 2011). As a part of a complex system (Yolles, 2006), banks are linked to the other actors of the system by several, different ties (Boardman and Sauser, 2008). Moreover, their actions should follow the social contract tying them with all the actors in the system (Donaldson and Dunfee, 2002); this means that banks have to interact with other actors in order to give them access to the resources they need in their operations. The relational network linking all the various actors in a given system will help to propagate, and to amplify, both the positive and the negative effects bank's actions have on each stakeholder, reaching even those actors that play in the same network of the bank but are not directly linked with it (Ekeh, 1974; Harrison and Wicks, 2013).

Corporations, in general, adopt social responsibility disclosure practices to communicate all the activities they are bringing in the system to their stakeholders, because those activities affect their behavior (Auger et al., 2008). Moreover, those practices are implemented to make the

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corporation a legitimate actor in its environment (market and society as well) (Campbell, 2000). They can help in creating a positive corporate association (Brown and Dacin, 1997) – i.e. the set of perceptions each stakeholder has of the bank behavior – that will influence how each stakeholder will evaluate all the corporation's activities (Mohr and Webb, 2005; Brown et al., 2006). By engaging in social activities and reporting on corporate social responsibility, banks develop the trust and goodwill of stakeholders, which can provide them with competitive advantages (Aguilera et al., 2006; Money and Schepers, 2007; Gill, 2008; Kolk and Pinkse, 2010). Prior studies argue that corporate social responsibility disclosure positively affect firms' image and enhance their reputation (Li et al., 2010; Vanhamme et al., 2012).

Due to the important negative external effects that poorly managed banks can impose to the system, the perception of the banks' corporate social responsibility disclosure is very important for all the actors playing in the same system of the banks. Extensive prior research suggest that as Corporate social responsibility disclosure contributes to the reduction of information asymmetry between banks and shareholders, increasing perceptions of firm performance, value, risk and thereby on firms' profitability, costs and share price (Godfrey et al., 2009; Ghoul et. Al., 2011; Cormier et al., 2011). Since the credit crunch of 2007-2008, stakeholders' perceptions of banks' risk and performance have become particularly important to the entire system sustainability, since they link on depositors and government agencies as key sources for funding and liquidity (Veronesi and Zingales, 2010; Grove et al., 2011).

The aim of this research is triple. First, it uses banks annual reports to explain how banks disclose their social responsibility information to identify what types of this kind of information they disclose. Second, it explains how third parties receive and communicate the information disclosed by banks. Third, it investigates the relationship between corporate social responsibility and banks' performance. In order to reach this aim, the paper will compare the Standard Ethics Rating (SER) whit evaluation provided by the coders using a Content Analysis, also computing Krippendorff Alpha to compute the reliability.

SER is a Sustainability Solicited Ratings (SSR), belongs to the category of extra-financial rating interested in the evaluation of corporate governance, environmental and social and measure the level of compliance with the indications of the EU, OECD and the United Nations.

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This paper uses banks' annual reports, rather than corporate social responsibility reports, because first contain fundamental documents scrutinized by a huge range of stakeholders (e.g. Toms, 2002; Campbell and Slack, 2008). Additionally disclosure of information linked to corporate social responsibility contained into the annual reports allows banks to show their balance between financial and social objectives.

Keywords: Corporate Social Responsibility Disclosure. Banks. Financial Performance.

REFERENCES

Aguilera, R.V., Williams, C.A., Conley, J.M., and Rupp, D.E. (2006). Corporate Governance and Social Responsibility: A Comparative Analysis of the UK and the US. *Corporate Governance: An International Review,* 14(3), 147-158.

Auger, P., Devinney, T. M., Louviere, J. J., & Burke, P. F. (2008). Do social product features have value to consumers?. International Journal of Research in Marketing, 25(3), 183-191.

Boardman, J., & Sauser, B. (2008). Systems thinking: Coping with 21st century problems. CRC Press.

Brown, T. J., & Dacin, P. A. (1997). The company and the product: Corporate associations and consumer product responses. The Journal of Marketing, 68-84.

Brown, T. J., Dacin, P. A., Pratt, M. G., & Whetten, D. A. (2006). Identity, intended image, construed image, and reputation: An interdisciplinary framework and suggested terminology. Journal of the Academy of Marketing Science, 34(2), 99-106.

Campbell, D. J. (2000). Legitimacy Theory or Managerial Reality Construction? Corporate Social Disclosure in Marks and Spencer, Pic Corporate Reports 1969-1997, Accounting Forum 24(1), 80-100.

Campbell, D., and Slack, R. (2008). Narrative Reporting: Analysts' Perceptions of its Value and Relevance. *Association of Chartered Certified Accountants Research Report 104*.

Cormier, D., Ledoux, M. and Magnan, M. (2011). The Informational Contribution of Social and Environmental Disclosures for Investors. *Management Decision*, 49(8), 1276-1304.

Donaldson, T., & Dunfee, T. W. (2002). Ties that bind in business ethics: Social contracts and why they matter. Journal of Banking & Finance, 26(9), 1853-1865.

Ekeh, P. P. (1974). Social exchange theory: The two traditions. London: Heinemann.

Gill, A. (2008). Corporate Governance as Social Responsibility: A Research Agenda. *Berkeley Journal of International Law,* 26(2), 452-478.

Godfrey, P.C., Merrill, C.B. and Hansen, J.M. (2009). The Relationship Between Corporate Social Responsibility and Shareholder Value: An Empirical Test of the Risk

ISBN: 9788890824258

Management Hypothesis. Strategic Management Journal, 30(4), 425-445.

Ghoul, S.E., Guedhami, O., Kwok, C.C.Y. and Mishra, D.R. (2011). Does Corporate Social Responsibility Affect the Cost of Capital? *Journal of Banking and Finance,* 35(9), 2388-2406.

Grove, H., Patelli, L., Victoravich, L.M. and Xu, P. (2011). Corporate Governance and Performance in the Wake of the Financial Crisis: Evidence from US Commercial Banks. *Corporate Governance: An International Review,* 19(5), 418-436.

Harrison, J. S., & Wicks, A. C. (2012). Stakeholder theory, value, and firm performance. Business ethics quarterly, 23(1), 97-124.

Kolk, A. and Pinkse, J. (2010). The Integration of Corporate Governance in Corporate Social Responsibility Disclosures. *Corporate Social Responsibility and Environmental Management,* 17(1), 150-26.

Li, S., Fetscherin, M., Alon, I., Lattemann, C. and Yeh, K. (2010). Corporate Social Responsibility in Emerging Markets. *Management International Review,* 50(5), 635-654.

Matten, D. (2006). Why Do Companies Engage in Corporate Social Responsibility?

Background, Reasons and Basic Concepts. The ICCA Handbook on Corporate Social

Responsibility. John Wiley and Sons, Ltd.: West Sussex, England.

Mohr L.A., and Webb D.J. The effects of corporate social responsibility and price on consumer responses. *Journal of Consumer Affairs*, 39.1 (2005): 121-147.

Money, K. and Schepers, H. (2007). Are CSR and Corporate Governance Converging? A View from Boardroom Directors and Company Secretaries in FTSE100 Companies in the UK. *Journal of General Management,* 33(2), 1-11.

Starks, L.T. (2009).EFA Keynote Speech: Corporate Governance and Corporate Social Responsibility: What Do Investors Care about? What Should Investors Care about?. *The Financial Review*,44(4), 461-468.

Toms, J.S. (2002). Firm Resources, Quality Signals and the Determinants of Corporate Environmental Reputation: Some UK Evidence. *The British Accounting Review,* 34(3), 257-282.

Vanhamme, J., Lindgreen, A., Reast, J. and van Popering, N. (2012). To Do Well by Doing Good: Improving Corporate Image through Cause-Related Marketing. *Journal of Business Ethics*, 109(3), 259–274.

Veronesi, P. and Zingales, L. (2010). Pauson's Gift. *Journal of Financial Economics*, 97(3), 339-368.

Yolles, M. (2006). *Organizations as complex systems: An introduction to knowledge cybernetics* (Managing the complex, Vol. 2). IAP. Greenwich, Connecticut

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BOOK OF ABSTRACTS

Perspectives of improvement in the dynamics of management of the vehicular flows in the big cities with the purpose to optimize the relationship *social cost / benefits*.
A way to achieve the social good or to make cash?

Dr. Luca Brancato – Chartered Accountant - Business Consultant (Independent Scholar)
e-mail: granpriore@gmail.com

In the most part of the big cities there are issues connected with the congestion of the vehicular traffic and with the management of that.

The political sphere is often in contradiction with the economic sphere for one hand, and with the social one on the other. The same social sphere, is referable to various demands, some of those easily perceivable, others not immediately perceivable (e.g. the quantity of thin dusts in the air).

The answers that the politics has given to that issue are manifold and, among them, often interconnected, sometimes contradictory. To forbid portions of the city or its arteries, "customs" to the entry (you see Congestion Tax), limitation of the transit to selected categories of consumers and/or persons or vehicles.

The most diffused practice seems to be the institution of the so-called Limited Traffic Zones (in Italy: ZTL), a relatively simple system or a *simplistic* way to look the problem(?).

The need to elaborate useful solutions in order to reduce the impact of such choices on the citizen and on the town - as it is a living structures – is evident by the empirical observation of the principal streets of the city already subtracted to the traffic and through the comparison between these and the remainders arteries that have the heavier resultant traffic.

Nowadays the lower pollution level in the Limited Traffic Zones may be overcompensated by that resultant by the congestion of the traffic in correspondence of its perimeter combined with the atavistic lack of parking lots in town(s).

A good definition of the interactions among the stakeholders - as well of the geography that they sustain - could mitigate both the levels of pollution in the adjacent areas, both the social and economic tensions that derive from the limitations to the transit.

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The proposed solutions, until now, were itself not productive of good results because the various subsystems that are set under the influence of the political choices, influencing itself too, have not been considered in their interdependences or, if and when this consideration has been done, such interdependences have not been considered in a (sufficiently) dynamic way. For those considerations may be useful - for a better understanding of the problem - the use of a model developed on the *System Dynamics* methodology that may conjugate the various sides of the topic.

A prioritary condition is the development of sub models of the groups of stakeholder being reliable. In order to do that is fundamental to identify the interrelations of these peoples also in their second level interactions. For instance the shop-owner should (or better: *must)* not only be considered as an economic operator, but he must also be considered as a citizen / user of the area. The peoples who lives in the zone is not only a resident, but also an economic operator.

Also the system of commuting between public transportation and private one must be revised as for the actual state the politics of limitation of the traffic effected today - actually in the city of Palermo - were focused on the inhibition of the use of the private car. It mean discouraging the owners to use the cars rather than encouraging the citizens to use of the public transport system.

Reversing such order of priority, and through a more defined segmentation of the implied variables and their mutual interactions, this work aims to reach to a model of simulation that could be helpful to define in an incisive way the good balancing between ties and permissions, between liberty and license, between discretion and will.

Keywords: ZTL, Congestion, Town, Pollution, Interdipendence, Priority, Commuting, Regulatory Impact Assessment, Palermo

REFERENCES

Li Donni, Vincenzo (1991). Analisi e governo della mobilita. In Li Donni V. *Manuale di economia dei trasporti*. Roma, It: NIS

Li Donni, Vincenzo (1995). Analisi e governo della mobilita. In Li Donni V. *Teoria delle scelte pubbliche*. Padova, It: CEDAM

Basile, G. et al. (2016). In Basile, G., Dominici, G. & Tani, M. *Place Marketing and Management: A Complex Adaptive Systems View*. *The Strategic Planning of the City of Avellino, Italy*. Syst Pract Action Res 29: 469. doi:10.1007/s11213-016-9372-9

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BOOK OF ABSTRACTS

From Place Brand to Place as Brand: a Systemic view.

Gianpaolo Basile
Lecturer of Destination Management Faculty of Economics, Universitas Mercatorum, Country Italy
e-mail: basilegianpaolo@gmail.com
Corresponding author

Gandolfo Dominici
Associate Professor of Marketing Faculty of Economics, University of Palermo, Country Italy.
e-mail: gandolfo.dominici@libero.it

Maria Antonella Ferri
Associate Professor of Marketing e Strategia Faculty of Economics, Universitas Mercatorum, Country Italy
e-mail: mariaantonellaferri@gmail.com

Abstract

This paper aims to contribute to destination management and place brand issues that are mainly related to rural regions and/or those devoid of big attractors. In this scenario, the paper focuses on the role of memory and authenticity, as part of a systemic vision of the territory in relation with its stakeholders. The work, after an excursus regarding the evolution of interdisciplinary studies on the territory, tries to fill the gap based on a static view of both the territory, as an object of study, and the relevant strategic and operational marketing and/or development planning. The work is based on a systemic-constructivist methodological approach that takes into account the studies on the pragmatics of communication. On such scientific basis the territory is considered as a complex adaptive system (CAS) that must meet the needs of its heterogeneous and numerous stakeholders in order to survive. The territorial system achieves survival through a constant two-way interaction process with the relevant stakeholders. Such process is accomplished, according to the pragmatics of communication, on the basis of a semiotic platform – that includes historical, value, cultural, visual, sign, production and material factors – within which the territory interacts with its stakeholders/beneficiaries via its social and economic features. The meaning/brand of the territory is the outcome of such interaction between

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different agents/social groups (Agnew, 1987; Massey, 1994). The approach presented marks a transition from a static view of the interpretation, planning and use of the territorial brand – created by the territory and seen as a distinctive sign in support of a competitive strategy between territories – to a place-as-brand model in which becomes relevant the definition/perception that the user develops about the territory (Massey, 1995). From an operational point of view, the brand thus conceived is represented as in constant adaptation or self-organization (Maturana and Varela, 1985), as it is the result of the interactions taking place between territorial social players and users of the territory itself. The outcome of such interactive processes is a network of mental associations that users develop with relation to the territory seen as a set of tangible and intangible features, tightly intertwined (Zenker and Braun, 2010). This approach goes beyond communication and stimulus processes aimed at producing destination perceptions and developed according to unidirectional processes (territory versus stakeholders), too often following top-down organizational models. Recent developments in the field of IT, such as Airbnb, should be considered as operational supports of our approach. Such developments not only contribute towards the creation and maintenance of biunivocal relationships between users and territory, but also towards remote fruition by users and their role as a sounding board within their reference social environment.

The work, by taking into account the changes of urban models also encouraged by institutional suprasystems, does not want to act as a universal reading tool to support dynamic planning for the development of geographical areas in the absence of major attractors, but rather aims at representing an evolution in the studies of place brand and destination management and a methodological support to researchers in the field of tourist marketing, destination management, experiential tourism, and to decision makers involved in the definition of the territory and therefore in its survival.

Keywords: place brand, place as CAS, symbolic constructivism.

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REFERENCES

Aaker, D.A. (1991), Managing Brand Equity, The Free Press, New York, NY.

Aaker, J., Fournier, S., Brasel, S. A., (2008) When Good Brands Do Bad, Working Paper Series, https://escholarship.org/uc/item/70z5s7bj, pp.1-17.

Agnew, J. A. (1987). Place and Politics: The Geographical Mediation of State and Society. Boston: Allen & Unwin.

Agnew, J. A. & Duncan, J. S. (1989). Introduction. In J. A. Agnew & J. S. Duncan, (Eds.), The Power of Place: Bringing Together Geographical and Sociological Imaginations. Boston: Unwin Hyman, pp. 1-8.

Ashby, W.R. (1956), An introduction to cybernetics, Chapman & Hail Ltd., London.

Ballantyne, D. and Aitken, R. (2007), Branding in B2B markets: insights from the service-dominant logic of marketing, Journal of Business & Industrial Marketing, 22/6 (2007) 363–371.

Basile, G. (2013), Relazioni tra impresa e individuo-consumatore, FrancoAngeli, Milano.

Basile, G., Dominici, G. and Tani, M. (2016), Place Marketing and Management: A Complex Adaptive Systems View. The Strategic Planning of the City of Avellino, Italy, Systemic Practice and Action Research, October 2016, Volume 29, Issue 5, pp 469–484.

Bateson G., (1972). Verso un' ecologia della mente. Adelphi, Milano.

Bateson G., (1979). Mente e natura: un'unità necessaria. Adelphi, Milano.

Bertalanaffy, L. von (1968). General System Theory. Braziller, New York.

Bocchi, G., Ceruti, M. (a cura di) (1985). La sfida della complessità. Feltrinelli, Milano.

Bateson, G. (1984), Verso un'ecologia della mente, Adelphi Edizioni, Milano.

Burgess, E.W. (1925), The Growth of the City: an Introduction to a Research Project, University of Chicago Press.

Christaller, W. (1933), Central places in Southern Germany, Gustav Fischer Jena. Prentice Hall, London.

de Certeau, M. (1988), The writing of history, Columbia University Press.

Deleuze, G. and Guattari, F. (1988), Che cos'è la filosofia?, Piccola Biblioteca Einaudi, Torino.

Delgado, N. (2007), Infra-humanization in a cruel context. Raw data.

Durkheim, E. (1984), The Division of Labor in Society, McMillan Education Ltd.

Foerster von, H., (1987), Sistemi che osservano, Astrolabio, Roma.

Fournier, S. (1998) Consumers and Their Brands: Developing Relationship Theory in Consumer Research, The Journal of Consumer Research, Vol. 24, No. 4 (Mar., 1998), pp. 343-373.

Gnoth, J. (2007), The Structure of Destination Brands: Leveraging Values, Tourism Analysis, Vol.12; pp.345-358.

ISBN: 9788890824258

Hanna, S. and Rowley, J. (2015), Towards a model of the Place Brand Web, Tourism Management 48, pp.100-112.

Healy, D. (1997), Cyberspace and place: The Internet as middle landscape on the electronic frontier, Internet culture, Routledge, London.

Kavaratzis, M. and Kalandides, A. (2015), Rethinking the place brand: the interactive formation of place brands and the role of participatory place branding, Environment and Planning A, June, 47: 1368-1382

Kotler, P. (2002), Marketing Places, The free press, Simon and Schuster, New York.

Latour, B. (2003), The promises of constructivism, Paper prepared for a chapter in Don Idhe (editor), Chasing Technology: Matrix of Materiality, Indiana Series for the Philosophy of Science, Indiana University Press, pp. 27-46.

Law, J. (2004), After Method Mess in Social Science Research, International Library of Sociology, Lancaster University.

Lefebvre, H. (1991), The Production of Space, in The People, Place, and Space Reader, Gieseking, J.J., Mangold, W., Katz, C., Low, S. and Saegert, S., Routledge, Taylor & Francis Group, New York and London.

Lloyd, G. and Peel, D. (2008), Functionalism and representationalism in contemporary urban agendas: a Scottish perspective on city-region branding- Urban Research & Practice, - Taylor & Francis.

Marx, K. (1847), Il lavoro salariato e il capitale. Editori Riuniti, Roma.

Massey, D. (1994). Space, Place and Gender. Cambridge: Polity.

Massey, D. (1995). The conceptualization of place. In D. Massey & P. Jess, (Eds.), A Place in the World? Places, Cultures and Globalization. Oxford: Open University/ Oxford University Press, pp. 45-77.

Maturana, H.R. and Varela F.J. (1985), Autopoiesi e Cognizione. La realizzazione del vivente., Marsilio Editori, Venezia.

McCarthy, J. (2007), Rural geography: globalizing the countryside, Progress in Human Geography 32(1) pp. 129–137.

McZenzie, W.J.M. (1967), Politics and social science, Penguin Books.

Park, R.E. (1952), Human communities: The city and human ecology, University of Chicago Press.

Pattee, H.H. (1996), "The problem of observables in models of biological organizations", in E.L. Khalil and K.E. Boulding (eds.), Evolution, Order, and Complexity, Routledge, London.

Payne, A., Storbacka, K., Frow, P. and Knox, S. (2009), Co-Creating Brands: Diagnosing and Designing the Relationship Experience, Advances in Brand Management, Journal of Business Research, Volume 62, Issue 3, March 2009, Pages 379-389.

Philips, N. (2006), Quality of Life: Concept, Policy and Practice, Routledge, New York.

ISBN: 9788890824258

Prahalad, C.K. (2004), The Blinders of Dominant Logic, Long Range Planning, Volume 37, Issue, 2, pp. 171-179.

Roegen, N.G. (1973), The Entropy Law and the Economic Problem, in Daly, H.E., Toward a Steady-State Economy, W.H.Freeman and Company, San Francisco.

Sassen, S. (1991), The Global City: New York, London, Tokyo. Princeton: Princeton University Press.

Van Assche, K. (2004), Signs in time. An interpretive account of urban planning and design, the people and their histories. Wageningen University.

Van Assche, K. and Lo, M.C. (2011), Planning, preservation and place branding: A tale of sharing assets and narratives, Place Branding and Public Diplomacy, Volume 7, Number 2, 1 May 2011, pp. 116-126(11).

Vargo, S.L. and Lusch, R.F. (2004), Evolving to a new dominant logic for marketing, Journal of marketing; Vol. 68 (January), 1-17.

Watzlawick, P., Beavin, JH. and Jackson, DD. (1971), Pragmatica della comunicazione umana, Astrolabio, Roma.

Weber, M. (1986), Economia e società, Edizioni di Comunità.

Zenker, S. and Braun, E. (2010), Branding a City: A Conceptual Approach fro Place Branding and Place Brand Management, in paper presented at the 39th European Marketing Academy Conference, Copenhagen, Denmark, 1-4 June.

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BOOK OF ABSTRACTS

A systems approach on sustainable mobility of visitors travel behaviour case Chatuchak market Thailand

Amphai Wejwithan
PhD student at Research Center of Transport Planning and Traffic Engineering Institute of Transportation, Vienna University of Technology, Austria

e-mail: amphai12@gmail.com
Corresponding author

Abstract

The launch and operations of mass transit in Bangkok has significant influences to the convenient and ease of traveling in Bangkok. The mass transit and public transport increase tourist attractions and activate local economy. Chatucak Sunday market is case study for public access and sustainable mobility and sustainable living. Accessibility to this market has facilitated tourism and shopping travel in the heart of Bangkok. Travel time to and return from this market has significantly reduced, the resulting a higher quality of environment and life for both tourists and local residences in addition to remarkable increase in shopping volume and values. Both Sky train or Bangkok Mass Transit System (BTS), and Bangkok underground or Mass Rapid Transit (MRT), become good examples of environmentally friendly transport of densely populated city of Bangkok. Additional expansion of mass transit and public transport like these could turn world rated top ten worst traffic congestion into the global most wanted tourism destination city. This study aims to develop policy alternatives and implementation measures to promote sustainable tourism and living in the big city like Bangkok by using Systems Dynamics Approach as an important part of system behaviour study to benefit policy alternative and decision making process.

Keywords: public transport, sustainable mobility, tourism attraction

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REFERENCES

Knoflacher H.(2001). Sustainable cities in countries for transportation learning from mistakes in counties with high motorization. *Opening session : 1st International Conference, Budapest, Hungary , 17-19 October, 2001*.

Knoflacher H. ((2002): Traffic Safety Activity in Vienna. *Abstract from „Best in Europe 2002 – Safer Cities", Brüssel – 25th June, 2002*.

Lohmann G.and Duval T. D. (2014). Destination morphology: A new frame work to understand tourism–transport issues? *Journal of Destination Marketing & Management* 3(2014) p.133–136.

Meadows H.D.(2008).*Thinking in Systems A Primer*. Chelsea Green Publishing.

Sterman. D. J. (2000). *Business Dynamics Systems Thinking and Modeling for a ComplexWorld*. The McGraw-Hill Companies, New York.

Sintunawa,C.(1986) The Assessment of Population Carrying Capacity for Thailand. *Journal of the Environment, Vol.1. February 1986. Bangkok, Thailand*.

Tangkitsiri W., Ogunlana O. S.,Oyegoke S. A. and Oladokun.G. M. (2013.) Dynamic Modelling of User Satisfaction: the Case of the Bangkok Mass Transit System . *Proceedings of the 31st International Conference , July 21-25, 2013 Cambridge, Massachusetts, USA* p.105 http://www.systemdynamics.org/conferences/2013/proceed/proceed.pdf . Accessed 13 November, 2016

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BOOK OF ABSTRACTS

The importance of institutional assets for business models. The case of tourism industry

Valentina Della Corte
Associate Professor of Management, Department of Economics, Management, Institutions, University of Naples Federico II, Italy
e-mail: valentina.dellacorte@unina.it
Corresponding author

Giovanna Del Gaudio,
Ph.D, Department of Management, Department of Economics, Management, Institutions, University of Naples Federico II, Italy
e-mail: giovanna.delgaudio@unina.it

Chiara D'Andrea,
Ph.D candidate, Department of Management, Department of Economics, Management, Institutions, University of Naples Federico II, Italy
e-mail: chiara.dandrea@unina.it

Fabiana Sepe,
Ph.D candidate, Department of Management, Department of Economics, Management, Institutions, University of Naples Federico II, Italy
e-mail: fabiana.sepe@unina2.it

Abstract

This paper aims at analysing the link between business models and the institutional assets of firms operating in the tertiary sector, with a focus on the tourism industry. The hypercompetition of this sector, indeed, refers not only to the competitive choices but also to the governance decisions, connected to the overall strategies that firms intend to adopt.

From a strategic point of view, the components of the business model that create value are "transaction content, structure, and governance" (Amit and Zott, 2001). This strategic perspective has been underestimated above all in the literature related to the tourism sector. Hence, in the light of the existence of this gap and of the importance of governance structure, the current paper

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studies whether and to what extent the governance form influences the outlying of a precise business model.

The paper intends to study if the governance mechanisms, modes and structure can influence the business model of firms, and in particular those operating in the tourism sector. Furthermore, the paper explores the existence of substantial differences in SMEs and big companies as regards the influence of governance structure on the business model.

In order to study this unexplored issue, the paper applies a complex research method that takes into account both the literature review methodology and case study analysis. Firstly, the literature review on this specific issue allows finding out the still existing research gaps in the up to now developed contributions in the tourism sector. Secondly, the case study analysis is in line with the exploratory nature of this paper since it is able to capture contextual richness and complexity of research issues (Yin, 2003) and how the different elements of the governance influence the strategic importance of the business model.

This study has strong implications both theoretical and managerial. From a theoretical point of view, this study fills in the existing gaps in literature. From a managerial side, the paper focuses the attention on the importance of the renewing and the creation of business models above all in the tourism sector and the connected capacity of the governance actors as well as of the other elements of the governance.

Keywords: business model, governance, tourism sector

REFERENCES

Amit, R., Zott, C. (2001). Value creation in e-business. *Strategic Management Journa*l, 22: 493-520.

Yin, R. K. (2003). *Case study research: Design and methods* (3rd ed.). Thousand Oaks, CA: Sage.

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BOOK OF ABSTRACTS

Entrepreneurial University Model – Short Literature Review

Ineza Gagnidze
Doctor of Economics, Associate Professor,
Iv. Javakhishvili Tbilisi State University, Georgia.
ineza.gagnidze@tsu.ge, Corresponding author

Abstract

"The search for new sources of finance to replace declining government funding for higher education is a strong imperative for universities in a number of economies to adopt "new managerialism" and "entrepreneurialism" (Deem, 2001). In the 21st century, the "entrepreneurial university" tends to displace the 20th century's socially-oriented "mass university", yet must still co-exist with the traditional "ivory tower" university (Scott P., 2014). "The role of the entrepreneurial university is increasingly being seen as important for finding new ways to compete and succeed in uncertain and unpredictable environments and for finding new solutions to the multiple challenges that need to be addressed for the public good, whether local or global" (Hannon P.D., 2013).

Additionally, other terms used have been: University Technological Transfer, Innovative Universities and Market Universities. We note that the origin of these names is the result of especially effective activities in the named directions of universities. The characterization of Entrepreneurial Universities is interestingly expressed by: Audretsch D. B. (2012), Etzkowitz H., et al. (2000), Hsu D. H., et al.(2007), Rasmussen, E., Wright M. (2015) and Farsi J.Y. et al. (2012).

"Entrepreneurship education seeks to raise awareness for entrepreneurship and to provide the knowledge and skills to encourage entrepreneurial activity as an indirect support mechanism for fruitful business-academia links" (Guenther J. Wagner K. 2008). Many works are devoted to the issues of effectiveness of teaching the entrepreneurship and holding the special trainings in the Entrepreneurial Universities, for example, Munir Z.A. et al. (2015), Mounstaghfir K., Sirca N. T. (2010), and Keat O.Y. et al. (2011).

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The studies are particularly diverse by its content, which includes the analysis of experiences of various countries. The studies conducted by University Industry Innovation Network and The OECD are noticeable. By studying 41 cases of 16 countries it was found that "Despite a long history, cooperation activities between businesses and universities in the field of education have a relatively low profile". This leads us to the final lower results and the problem of effective leader is underlined. Regarding this, Oyugi, J. L. (2015) indicates that the leaders must provide that: "both expertise and new perspectives must be available in the work place, both academic and personal diversity must be present in the institution of higher learning, innovative opportunities must be identified and/or put into practice, time must be made available for reflection (incubation period) and creativity must be followed up by convergent thinking through priorities and choice". Also "the main implications for university managers are to have open communication and collaboration with the different agents involved in the innovation and entrepreneurial actions (government, enterprises, research centers, associations, society, among other) in their regions and try to work together to configure adequate environments oriented toward sustainability and their specific roles in regional development" (Guerrero M., et al 2014).

Thus, upon the studies provided by the world-renowned organizations, the ideas of well-known scientists and the example of the best practices from the various countries, we can conclude that Entrepreneurial University model is effective and leads to the innovative consequences. At the same time it should be noted that to move at such level of University development will require considerable effort.

***Keywords*:** Education**,** Entrepreneurial University, Entrepreneurship

REFERENCES

Audretsch, D.B. (2014). From the entrepreneurial university to the university for the entrepreneurial society. The Journal of Technology Transfer, 39(3): 313–321

Deem, R. (2001). "Globalisation, New Managerialism, Academic Capitalism and Entrepreneurialism in Universities: is the local dimension still important?" Comparative Education, 37(1): 7-20.

ISBN: 9788890824258

Etzkowitz, H., Webster, A., Gebhardt, C., Terra, B. R. C. (2000). The future of the university and the university of the future: evolution of ivory tower to entrepreneurial paradigm. *Research policy*, *29*(2): 313-330.

Farsi J.Y., Imanipour N., Salamzadeh A,. (2012). Entrepreneurial University Conceptualization: Case of Developing Countries, International Journal Global Business and Management Research, 4(2): 193-204.

Guenther, J., Wagner, K. (2008). Getting out of the ivory tower – new perspectives on the entrepreneurial university. European J. International Management,2 (4): 400-417.

Guerrero, M. Urbano, D. Fayolle, A. (2016). Entrepreneurial activity and regional competitiveness: evidence from European entrepreneurial universities, The Journal of Technology Transfer, 41(1): 105-131.

Hannon, P. D. (2013). Why is the Entrepreneurial University Important?. Journal of Innovation Managemen, 1(2): 10-17.

Hsu, D.H., Roberts E.D., Charles E. Eesley,Ch. E. (2007). Entrepreneurs from technology-based universities: Evidence from MIT. Research Policy, 36(5): 768–788.

Keat, O.Y., Selvarajah, Ch., Meyer, D. (2011). Inclination towards entrepreneurship among university students: An empirical study of Malaysian university students, International Journal of Business and Social Science, 2(4): 206-220.

Mounstaghfir, K., Sirca, N. T. (2010). Entrepreneurial Learning in Higher Education: Introduction to the Thematic Issue, International Journal of Euro-Mediterranean Studies, 3(1): 3-26.

Munir, Z.A., Idrus, S., Shukur, Sh. A. M., Ithnin, R., Mohamad, S.S.(2015). The Effectiveness of Entrepreneurial Motivational Training Programme among University Students, International Journal of Social Science and Humanity, 5(5): 487-490.

Oyugi, J. L. (2015). Entrepreneurial and Innovative Leadership: Evolution towards a better Higher Institution of Learning. Journal of Educational Policy and Entrepreneurial Research (JEPER), 2(8): 18-27.

Rasmussen, E., Wright, M. (2015). How can universities facilitate academic spin-offs? An entrepreneurial competency perspective. The Journal of Technology Transfer, 40(5):782-799.

THE STATE OF HIGHER EDUCATION 2014, The OECD Higher Education Programme (IMHE),OECD, 2014.

UIIN Good Practice Series 2014 – Fostering University-Industry Relationships, Entrepreneurial Universities and Collaborative Innovation, Edited by: Meerman A., Kliewe Th.,University Industry Innovation Network, 2014.

Walshok, M.L., Shapiro, J.D. (2014). Beyond Tech Transfer: A More Comprehensive Approach to Measuring the Entrepreneurial University. http://www.clustermapping.us/sites/default/files/files/resource/Beyond%20Tech%20Transfer.pdf

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BOOK OF ABSTRACTS

Challenges of Entrepreneurial Attitudes and Business Activity in Georgia

Ia Natsvlishvili
Associate Professor of Economics, Department of Microeconomics, Tbilisi State University named after Ivane Javakhishvili ,Tbilisi, Georgia
e-mail: ia.natsvlishvili@tsu.ge
Corresponding author

Ia Natsvlishvili
Associate Professor of Economics, Department of Microeconomics, Tbilisi State University named after Ivane Javakhishvili , Tbilisi, Georgia
e-mail: ia.natsvlishvili@tsu.ge

Abstract

The paper describes the tendencies of social attitudes toward entrepreneurship, analyses the results of research on population's attitude towards entrepreneurship in Georgia conducted by several prominent research organizations, discusses the empiric data derived from the survey. The analyzed surveys reveal specific characteristics of respondents attitudes toward entrepreneurship. One of the research question of the study is identification of Georgians attitudes toward entrepreneurship, its specific features, various aspects of entrepreneurial attitudes, future expectations of respondents, identification of attractive sectors for self-employment and entrepreneurial activity.

The paper stated the following research hypothesis: due to successful reforms of last years negative attitudes toward entrepreneurship should have been less anticipated considering the high unemployment level in Georgia and difficulties arising from current economic transformation processes. Strong desire of self-employment and huge expectations of engagement in entrepreneurship in the future should have been anticipated. The paper also discusses the entrepreneurial attitudes in Georgia as an example of post-soviet transitional country. It represents the analysis of existing quantitative and qualitative studies with regard entrepreneurial attitudes. Desk research method is used to discuss research questions.

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Over the last two decades the transformational processes in Georgia had a huge influence on formation of attitude of the population towards entrepreneurial activity. Through the analysis of existing literature and research results paper aims to give the comprehensive answers on the following questions: Are the difficulties and problems arisen during the current reformation processes in Georgia the cause of negative attitudes toward entrepreneurship? What are the desires and expectations of the population concerning of becoming the entrepreneur?

The large-scaled survey of populations' attitude towards entrepreneurship in Georgia was carried out recently by prominent research organization Global Entrepreneurship Monitor. This research at certain level covers the whole country, analyzes specific features of populations' attitude towards entrepreneurship and systemizes the results. Georgians consider successful entrepreneurs to have a high status in society (75.9% of adult population) and 66% of adults think that entrepreneurship is a good career choice. Only 7.2% of Georgians are planning to open-up or are already running a new venture. Motivation to engage in entrepreneurial activities is almost equally distributed between necessity-driven (48.6%) and opportunity-driven (50.6%) entrepreneurship (Lezhava, B., Brekashvili P., Melua I., 2014).

According the data of National Statistics Office of Georgia by January 1st 2015 in deferent sectors of Georgian economy existed 667,363.00. registered organizations. From this number 636,067.00 were commercial legal entities and physical persons. Among them 473,542.00 subjects (74.5%) were individual entrepreneurs. According the official data by the February 1st, 2015 actively operated businesses were 118,108.00 (20.0% of registered subjects). The biggest number of businesses was engaged in trade and repairing service (Machavariani et al. 2015).

Georgia's score in social values towards entrepreneurship is higher than the average scores of EU and Non-EU countries. Georgia is on 6th place in terms of perceiving the creation of a business as a good career choice among efficiency-driven European countries. The proportion of the population who thinks that entrepreneurship is a good career choice, successful entrepreneurs have a high status within the society and media attention is high for entrepreneurship is higher in Georgia than the average proportion within EU and Non-EU countries. It is also higher than the proportion of population in the benchmarked country – Estonia (Lezhava, B., Brekashvili P., Melua I., 2014).

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Compared to efficiency-driven EU and non-EU economies, early stage entrepreneurship activities in Georgia are mainly necessity-driven rather than opportunity-driven. Over the last two decades the transformational processes ongoing in the economy of Georgia and in its social system have obviously had a huge influence on formation of attitude of the population towards entrepreneurial activity. Are the difficulties and problems arisen during the current reformation processes in Georgia the cause of negative attitudes toward entrepreneurship? Do the transformation processes in Georgia cause absence of desire of becoming entrepreneur or on contrary? How deeply has the population realized the risks and dangers associated with entrepreneurship? What are the desires and expectations of the population concerning of becoming the entrepreneur? What are the expectations and self-employment perspectives over nearest future? In order to give the comprehensive answers on these questions it is necessary to conduct long-term and wide-scaled researches. Express survey of respondents in Tbilisi in 2010 conducted by author can be considered as an attempt to answer this questions.

91.5% of Georgian respondents would like to be self-employed. In contrast, Europeans remain far less keen on becoming an entrepreneur. In Georgia, respondents' greatest fear is uncertain income from entrepreneurship – 48% of respondents consider it as a greatest fear of becoming an entrepreneur. 39.6% of respondents are concerned of bankruptcy from entrepreneurship. One of the specific characteristics of Georgians' entrepreneurial attitudes is the Georgians' expectations of becoming self-employed: about 51.4% of Georgians see feasibility of becoming self-employed in next five years. Analysis of empiric data proves that 91.5% of respondents express willingness to be self-employed. In contrast, Europeans remain far less keen on becoming an entrepreneur. Over the last years on the background of successful reforms in Georgia negative moods towards entrepreneurship are weak. On the background of high unemployment the desire of becoming self-employed is strong. Positive attitudes of the respondents in Tbilisi towards entrepreneurship indicates their self-confidence, feeling of social and political stability, expectations of success of market oriented economic reforms. (Natsvlishvili, 2011).

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It might seem paradoxical that despite big desire to be self-employed, the significant part of the respondents prefers to be employed in the public sector rather than in private sector. 55.7% of respondents prefer to be employed in the public sector and 41.2% of the respondents prefer to be employed in private sector. The data is missing from 3.1% of respondents. Such paradoxical situation might be explained by fact that irregular incomes are considered as the biggest fears of entrepreneurship and correspondingly that of private business. From this point of view, one can assume that employment in public sector is considered by the Georgian respondents as a guaranty of stable incomes.

Keywords: Entrepreneurial Attitudes, Entrepreneurial Activity, Business Activity, Post-Soviet Georgia

REFERENCES

Global Entrepreneurship Monitor. *GEM Global Report*. (2014). [online] Available at http://www.gemconsortium.org/report [Accessed 20 December, 2015].

Kuriakose, S. ed., (2013). *Fostering Entrepreneurship in Georgia*. Washington: The World Bank. Available at: < http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2013/08/27/000356161_20130827152554/Rendered/PDF/806730PUB0Fost00Box379809B00PUBLIC0.pdf> [Accessed 20 December, 2015].

Lezhava, B., Brekashvili P., Melua I., (2014). *Global Entrepreneurship Monitor., 2014 Georgia Report*. [online] Available at http://www.cu.edu.ge/images/caucasus_university/docs/csb/GEM%20Georgia/Georgia_GEM_National_Report_2014%20final_CS.pdf . [Accessed 20 December 2015].

Machavariani Sh., Shatberashvili O., Tavartqiladze S., and Ghaghanidze G., (2015). *Major Supporting Conditions for the Development of Small and Medium Size Business in Georgia*. Caucasus University and Friedrich-Ebert-Stiftung (in Georgian).

Natsvlishvili, I. (2011). *Entrepreneurship Attitudes in the Context of Post-soviet Transformation (Case of Georgia)* [online] Available at: <http://www.gwu.edu/~rpsol/2011-Ia-Paper-WBRF.pdf> [Accessed 15 December 2015].

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BOOK OF ABSTRACTS

The State Tourism Policy Model of Georgia

Marina Metreveli
Doctor of Economics, Professor of Business Engineering Faculty,
Georgian Technical University, Georgia
E-mail: metrevelimarina7@gmail.com,
Tel.: +995 591 939455
Corresponding author

Abstract

The paper is dedicated to development of new state policy model on tourism development in Georgia with the main emphasis on the priority direction for management of the Governmental undertakings and destinations facilitating to sustainable tourism development in various regions of the country.

Today, one of the priorities of the Government of Georgia for economic development of the country is declared to be sustainable tourism development in as much as it facilitates to not only growth of economic incomes but protection of the main tourism resources in the regions – environment and cultural monuments; to development of highlands which despite of uniqueness of natural and cultural heritage, is almost deserted by the local inhabitants due to scarcity of job opportunities.

Despite of declaration of tourism by the Government of Georgia as one of the most important sectors for economic development, the tourism resource of the country is irrationally and inappropriately used and hence, economic benefits obtained from development of the field are still minor.

The hereof fact is directly connected with the current situation of state policy on tourism in the country, which deriving from the current state of economy, requires transition to the new model of state policy on tourism and elaboration of new priorities of management and development of tourist destinations.

The work aims at analysis of the current situation on state policy on tourism in Georgia and elaboration of a new model for state management of tourism, emphasizing state policy on tourism development on local and regional levels (destination management).

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Deriving from the hereof objective, we have outlined the solutions as follows:

- Analysis of the current state of tourism development in Georgia and identification of problems and impediments in development of the sphere;
- Identification of priority directions for management and development of tourist destinations in the regions of Georgia;
- Elaboration of new model of state policy for development of the regions and tourist destinations.

The role of government in tourism and the influence of state policy on tourism development have long been of interest to scholars (Bramwell & Lane, 2000; Hall, 1994; Hall & Jenkins, 1995; Jenkins, 1980; Jenkins & Henry, 1982).

Tourism policy-related changes are associated with the surveys, discussions and solution of new challenges for the scientists and policy makers worldwide (Metreveli M. 2011). Planning and management of sustainable development of tourism is the top priority task of policy making on the national level of tourism for developing countries particularly.

Tourism policy and planning (Governing National Tourism Policy, WTTC, 2015), Although successive governments are constantly rethinking the role and responsibilities of their national tourism administrations (GNTAs) to reflect new government priorities or to take account of changes in the industry marketplace, government's role in Travel & Tourism is generally to:

- Set national tourism policy;
- Determine and allocate the tourism budget;
- Establish an appropriate legislative framework;
- Oversee the administrative structures for policy delivery;
- Assess and influence wider government policies impacting on tourism; and
- Put in place appropriate research, statistics and evaluation programs.

In a well-managed GNTA, tourism policy unit/staff provide advice to the government on basic infrastructure needs and how it can create the right environment for enhanced productivity and growth in the Travel & Tourism sector, thereby maximizing the sector's contribution to the national economy.

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The research unit not only monitors the sector's performance for the benefit of government and other stakeholders, but it also evaluates the effectiveness of government initiatives that impact on tourism.

Reviewing different national strategies developed by several governmental bodies in Georgia it is clearly seen that at its core the Georgian Governmental policy focuses on nine key pillars (pillars are unranked) of preservation, development and security: 1. Ensuring sovereignty and territorial integrity; 2. Developing state institutions and strengthening democracy; 3. Strengthening national unity and civil consent; 4. European and Euro-Atlantic integration; 5. Securing stable long-term economic growth; 6. Ensuring civil integration and maintaining national and cultural uniqueness; 7. Strengthening the transit role of Georgia; 8. Safeguarding the natural environment of Georgia and the region; 9. Ensuring energy security. (Georgia Tourism Strategy 2025, Volume 1: Situation Analysis)

Tourism development policy of the country shall comply with the policy of development of the country; hence various Ministries and agencies of the economic sector of the country are actively involved in tourism development and planning of Georgia. Unfortunately, it is noteworthy that at this stage we fail to correctly define the strategic objectives of the field development and consecutive implementation of the tasks. The reason for impediment of the field development is pure coordination and even absence thereof between the hereof agencies related to planning and management of the Governmental undertakings for tourism development.

Nowadays, LEPL Georgian National Tourism Administration (GNTA) is the Government institution which serves as the "Sector Management Authorized Body". According to its Statute, Goals and Tasks of the Administration are set as follows: Goals: to form national policy of tourism development and to implement it, to promote sustainable tourism development, as a result of tourism development, to support the rise of export earnings and job creation; Tasks: to attract foreign travelers, promote domestic tourism, support the development of tourist places, infrastructure and human resources in the field of tourism.

It is noteworthy that the Tourism Regional Management Offices take the particular place in the structure of the National Tourism Administration of Georgia (see, Figure 1).

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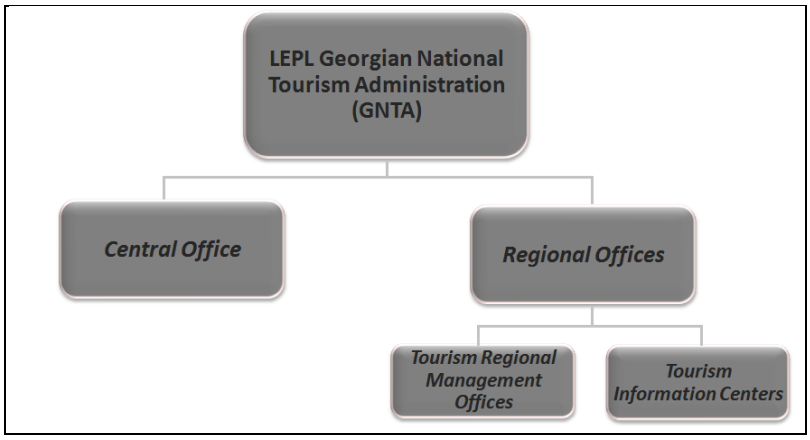
Figure 1. Structure of GNTA



Due to accession of Tourism Regional Management to the Regional Municipal Structures and lack of funding, the primary task cannot be implemented, envisaging the crucial challenge of the world tourism: ***Sustainable development of tourist regions and tourist destinations.*** Besides, the hindering factors for the field development includes the current Law on "Tourism and Resorts of Georgia" adopted in 1997 and just a few amendments have been adopted thereto up-today.

In view of the hereof solutions for tourism development of Georgia, the Government shall plan and implement the basic events as follows: development of the strategy for development of tourism directions in the regions and facilitation to implementation thereof; facilitation to development of technologies for production of tourist products and infrastructure; stimulation of development of internal tourism; identification of Georgia and Georgian regions in particular as of the destinations desirable for tourism on the world tourism markets; diversification of the tourist product on the national and international markets; establishment of European standards in the tourism educational system; stimulation of set up of the new tourist infrastructure units, update and due functioning of the current units (especially in the regions). In view of complex analysis of the current state of state policy on tourism development in Georgia, the work provides the institutional arrangement of the tourism sphere and the gaps in the legislative base; purpose and tendencies of development of tourist infrastructure in the regions; current situation of training of professional personnel in tourism sphere and the education system. The hereof issues are the

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main directions of tourism policy of Georgia and serve the basis for development of the sphere on micro and macro levels. Deriving from the analysis, the work provides the problems and impediments that the sphere encounters today. Sustainable tourism development policy in Georgia, deriving from the regional peculiarities of the country, is in direct connection with necessity to develop and establish new rational model of tourism development policy on the national level.

The survey provided in the work relates to the new approach to tourism policy of the country, which first of all concerns economic welfare and new job opportunities for the highland population of Georgia. At that, it is noteworthy that the new model envisages the priorities outline as the Governmental endeavors facilitating to internal tourism development as internal tourism entails stimulation of economic activity within the country, income distribution, improvement of tax balance and equalization of the economic level of the regions; preservation of tourism potential of highland regions; creates pre-conditions for development of services and standards for tourist attraction, which is to consistently develop respective infrastructure and increase service quality; enact as international so internal investments. All the hereof remedies will serve as natural and sustainable transition from one tourism development level to the next.

Thus, elaboration of a new model of state policy on tourism, as of one of the important institutions for incomes and employment in the country, is mainly conditioned with necessity and timelines of new approach to destination management; at that, tourism development in the country shall be related to the economic development strategy and be based on concept of economic development of Georgia.

Keywords: Georgia, Tourism Policy, Tourism Product, Tourism Regions, Sustainable Tourism, Destination Management

REFERENCES

Bramwell, B., & Lane, B. (Eds.). (2000). *Tourism collaboration and partnerships: Politics, practice and sustainability*. Clevedon: Channel View Publications.

Georgia Tourism Strategy 2025, *Situation Analysis* (2015), Georgian Tourism Administration, Tbilisi Georgia.

Hall, C.M., & Jenkins, J.M. (1995). *Tourism and public policy*. London: Routledge.

ISBN: 9788890824258

Jenkins, C.J. (1980). Tourism policies in developing countries: A critique. *International Journal of Tourism Management, 1*, 22–29.

Jenkins, C.J., & Henry, B.M. (1982). Government involvement in tourism in developing countries. *Annals of Tourism Research, 9*, 499–521.

Metreveli, M. (2011). Environment and Ecotourism Management. Tbilisi, Georgia, "Favoriti Printi" Publishing house (In Georgian Language).

Metreveli, M. (2011).Tourism Economic & Policy. Tbilisi, Georgia, "Favoriti Printi" Publishing house (In Georgian Language).

Michael Hall. C. (2011). A typology of governance and its implications for tourism policy analysis**,** *Journal of Sustainable Tourism,* Vol. 19, Nos. 4–5, May–June 2011, 437–457

Penrose, J. (2011).Government Tourism Policy, DCMS, London, UK.

Scott, N. (2011).Tourism Policy: *A Strategic Review*, Published by Goodfellow Publishers Limited, Woodeaton, Oxford, OX3 9TJ.

World Travel&Tourism Council (2015), *Governing National Tourism Policy*, WTTC.

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BOOK OF ABSTRACTS

The objective of the Company mission is based on the policy for enhancement of corporate social responsibility.

Irina Gogorishvili

Associate Professor of Economics, Department of Economics and Business, Ivane Javakhishvili Tbilisi State University of Georgia
e-mail: irinagogorisi@yahoo.com ****

Abstract

The work considers the mechanism of impact of advertisement on increase and regulation of the corporate responsibility and corporate citizenship as of the status capital of the company. The article reveals the specific role of regulation of the social report of the company as of the non-tangible capital thereof, implying the risk prevention function of the damage of the status and the reputation of the company and facilitation to the sector partnership agreements of inter-dependent economic agents, which restricts the transaction costs.

The idea of equal distribution of corporate social responsibility between the company, society and the state is highly substantiated and the objective of the Company mission shall envisage the impact of the presentation and advertisement concerning the permanent upgrade of the brand of the company on the society prior to presentation of the product.

The study aims at analysis (description) of the impact mechanism of advertisement on increase of the corporate responsibility as of the status capital and regulation process of the company.

The tasks as follows are subject to be implemented according to the objective of the study:

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- Identification of the role of social responsibility between the company, society and the state in view of successful implementation of business engineering;
- Study and advertising of the Code of Conduct of the company activity in view of effective realization of the catalogue of the objectives;
- The link of the marketing management objectives of the company with the mission components in view of enhancement of efficiency of social activity;

The theoretical basis of the work concludes the scientific studies on issues of marketing management, corporate social responsibility and creation of status (non-tangible) capital.

The dialectical principles have been used upon the study detecting the essential specifications of the events and the processes, defining the reasons and development tendencies thereof within the economic milieu. The work also uses the methods of system analysis, comparisons and analogues.

The policy of social responsibility and business ethics protects the status of the company and minimizes losses during crisis. It facilitates to maintenance of loyal attitude of the consumers towards the brand of the company, which restricts reduction of sales. Facilitation to the hereof policy by the state requires development of the scientific surveys and recommendations for the managers. Definition and specification of the context of the following categories are of utmost important: “corporate social responsibility”, “corporate citizenship” and “charity” as they create and have impact on the motivation of behavior of the owners, managers and the consumers, which in the end requires realization of the objectives outlined under the company mission.

The study has revealed the specific role of the social report of the company as of the instrument of control and regulation of non-tangible assets thereof. On the one hand, it is expressed in the risk preventive function of damage of the status and the reputation of the company and on the other hand it envisages facilitation to the sector partnership agreements and consents of the economic agents, implying restriction of transaction costs. The concept of social marketing elaborated by the scientists envisages increase of corporate social responsibility by means of formation and establishment of ethical standards in the company activity, which facilitates to realization of the demands and the interests of the market participants and increases public welfare. At the same time, the significant role of the activity of the company, implemented

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prior to operation of the company appears beyond the enlarged interpretation of social marketing, manifested in development of one of the main integral parts of business engineering – company mission. It is the very stage for elaboration of the company brand, which shall envisage installed (or indicated) elements of the corporate responsibility and corporate citizenship. Hence, the advertisement as one of the integral parts of the marketing management shall be oriented to elaboration of the profitable brand and to estimation of the outcomes (manufactured product and services) of public benefits of the company activity aftermath. Based on the scientific work, we may conclude that:

- Corporate social responsibility shall be equally distributed between the company, society and the state. Unequal distribution thereof in terms of social and politico-economic estimation (by means of evasion of business responsibility through enhancement of the role of the state) is irrelevant;
- In view of enhancement of the corporate responsibility and corporate citizenship, presentation and advertising of the permanent upgrade of the brand shall serve for impact on the society prior to presentation of the product;
- Development and establishment of competitiveness of the companies of the developing countries will at significant extent depend on installment and enhancement of social responsibility and social citizenship elements within their missions. The opposite attitude of the companies impedes and restricts effective activity thereof on the international markets in long-term perspective.

Keywords: corporate social responsibility, business engineering, corporate citizenship

REFERENCES

Aguilar F.J.(1994). *Managing Corporate Ethics*. *Learning from American Ethical Companies*. *How to Supercharge Business Performance*. -N.Y.: Oxford University Press.

Benson G.C.S. (1983). *Business Ethics in America*. N.Y., D.C. Heath and Company.

Egan J., Wilson D.(2002) *Private Business*.*Public Battleground: The case for twenty-first century stakeholder companies*. Basingstoke (Hants.) Palgrave.

Lussier N.R. (1990) *Human Relations in Organizations*. A skill-Building Approach. Irwin, Boston.

ISBN: 9788890824258

Kotler Philip (2005). *Corporate social responsibility: doing the most for your company*. Irwin, Boston.

Morimoto R., Ash J. Cope C., (2004).*Corporate social responsibility audit: from theory to practice*. the Judge Institute of Management, Cambridge, WP 14.

Is there really a link between CSR and financial performance?, http://www.csreurope.org/aboutus/CSRfactsandfigures page397.aspx#performance

Overview of Business and Community Investments, http://www.bsr.org/CSIlResources/IssueBrieroetail.cfm?Documentro=48978

Overview of Corporate social responsibility, http://wv\^v.bsr.org/BSRResources/IssueBrieffietail.cfiii?DocumentID=48809

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BOOK OF ABSTRACTS

About Marketing Process Model and Relationship Marketing

Maia Seturi
Asistant Professor of Economics and Business Faculty of Iv. Javakhishvili Tbilisi State University, Georgia.
e-mail: maia.seturi@tsu.ge Corresponding author

Ekaterine Urotadze
Assistant Professor of Economics and Business Faculty of Iv. Javakhishvili Tbilisi State University, Georgia.
e-mail: ekaterine.urotadze@tsu.ge.

Abstract

Marketing is about identifying and meeting human and social needs. One of the shortest good definitions of marketing is "meeting needs profitably" (Kotler & Keller, 2012, p.5). Marketing process model consists of five parts. The first four steps direct one's attention to creating something valuable for consumer, while the fifth one operates to get something valuable from the consumer (Kotler & Armstrong, 2015, p. 6).

A profitable relationship with consumers is being established by: clarifying buyers' wants, creating the buyer-orientated marketing strategy, creating and starting the marketing programs that are necessary to get the best values. The establishment of relationship with buyers includes the management of this process. Consumer relationship management means the whole process of offering them the best values and achieving their satisfaction.

Those companies, which consider it important to create the facilitating conditions for buyers' satisfaction, have to clarify the meaning of the value perceived by the buyer. The following helps us figure out what we mentioned above: We have to ascertain the difference between the benefit the buyer gets and the price the buyer pays for the product.

Usually, we determine the buyer's value towards competitors. The consumer buys the product of the company that (in his/her opinion) will give the most benefits to him/her. The buyer can make a mistake in the evaluation of the product, of course. Instead of the actual value, the

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perceived value of the product determines, whether one will buy it or not. Therefore, the correct positioning of the product on the market is very important. The company must convince the buyer that its product is superior to other analogous products.

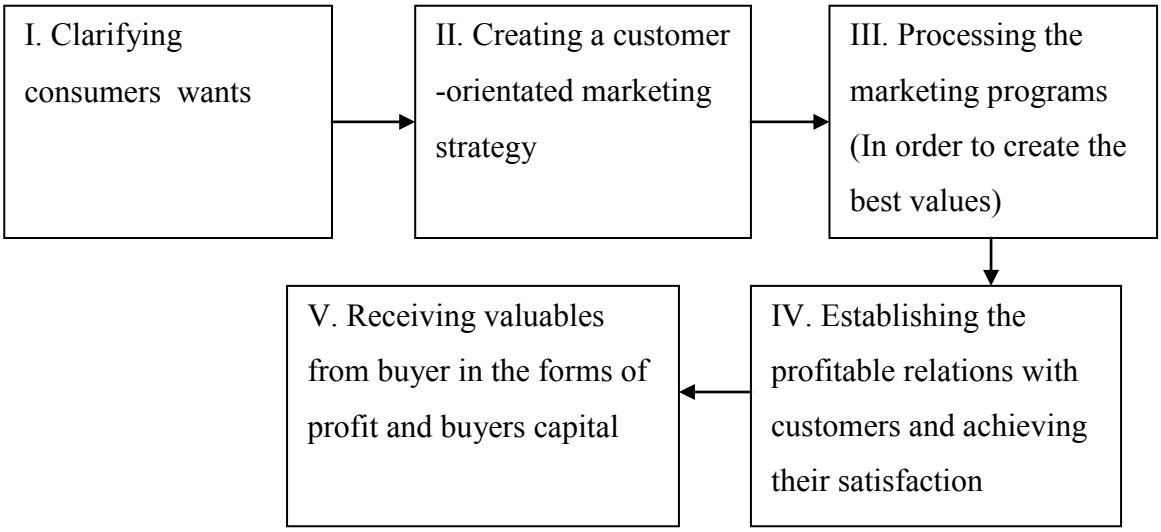

Fig.1. Marketing process simple model

The buyer's satisfaction index is obtained by the balance between one's expectation and perception towards the product. When the quality of value, received by the process of using the product does not meet the expectations, the buyer gets dissatisfied. Therefore, the experienced companies make such promises that they can fulfill. (Doyle & Stern, 2007, p. 65). Sometimes, they offer more value than they promise and inspire the buyers this way. Relationship marketing is the creation of customer loyalty. Organizations use combinations of products, prices, distribution, promotions, and service to achieve this goal. Relationship marketing is based on the idea that important customers need continuous attention. (Futrell, 2011, p.53).

It's important to determine the buyers' satisfaction index. If this index gets worse, it's necessary to determine its reasons, which is not a simple process. The reasons may vary in: reducing the product's quality, the increase in buyers' expectation level and etc.

Georgian companies lead their relations with buyers to these levels:

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- As food stores, as well as non-food stores usually establish the basic relationship with buyers. They set up their relations using web-sites, discounts, stimulate events;
- Companies, which have a low number of buyers, but receives a big profit, it establishes a partnership with them. This often happens between producers and retailers. For example, some companies reward their loyal and frequent consumers for buying their products in high quantities (Loyalty cards). This method of approach is widely used in the big supermarkets and pharmacies (Newspaper "24Saati", 2010).
- The third way of establishing the relationship with buyers is to add a structural connection with them.

Thus Companies approach the different types of buyers in different ways. The manufacturers often try to establish relationships with more profitable buyers, however, the buyer with a low-income can become a very profitable in the future. Therefore, dividing buyers in two types mentioned above is risky.

Keywords: Marketing process, Customer loyalty, Relationship marketing.

REFERENCES

Doyle P., Stern P. Marketing Management and Strategy (4th ed.). Translate in Russion. (2007). Sankt Peterburg, Piter Publishing

Futrell, Charles, M.(2011). Fundamentals of Selling. (12thed.).Texas. Published by McGraw-Hill/Irwin, A & M University.

Kotler, P., & Armstrong, G. Principles of Marketing (14thed.). Translate in Georgian. (2015). Tbilisi, Sulakauri Publishing.

Kotler, P., & Keller, K.L. (2012). Marketing Management (14thed.). Boston. Prentice Hall, Pearson.

Newspaper"24 Saati",24 october (2010). Loyalty cards boom in Georgia, http://www.24saati.ge/

Newspaper "24 Saati", 31 october (2011). "The Unicard" offers consumers a pleasant news

http://www.24saati.ge/

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BOOK OF ABSTRACTS

Effective models formation of travel companies' management in Georgia

Zeinab Surmanidze
Ph.D Student of Economics Batumi Shota Rustaveli State University, Georgia
e-mail: zeinabsurmanidze@bsu.edu.ge
Corresponding author

Ketevan Tchanidze
Ph.D Student of Economics Batumi Shota Rustaveli State University, Georgia
e-mail: ketevan.tchanidze@bsu.edu.ge
Other Authors

Abstract

There are lot of countries in the world, where the more than half of the travels are planned and executed in Online Regime. For example: Great Britain, Germany, Australia and other developed countries. Tourism supports the currency inflow, development of infrastructure and economic growth in the country. The modern informational technologies enable the companies acting on the market, to expend the geographical area of the market, to find the potential customers in different social segments, to carry out advertisement campaign in an online regime, (for which the requirement is growing day by day and the costs are decreasing), to increase their activity by the experience examples of worlds' countries, to establish the models modern and effective for them. Werthner and Ricci in 2004 year discovered that, tourism has a leading position in Electronic commerce, (Dimitrios Buhalis 2008) and that the online tourism has the significant importance in internet economic development, since the most of the tourists in the travel companies come via internet. "Website owners should, therefore, pay more attention on making customers feel comfortable and secure to complete their reservations and to increase trust in the online environment" (Chen, 2006, Bauernfeind & Zins, 2006).

The basic sources of attracting the customers for the travel agencies are the placement of context advertisement on the search sites, or optimization of the search system of the site. "With less time spent on waiting and planning, and more time on enjoyment, consumers would surely like to make reservations and received tickets at home via travel websites ".(O'Connor & Frew, 2001). "Web marketing is therefore gradually becoming mainstream". (Buhalis,2003, Fesenmaier et al., 2003).

"The Internet also enabled them to dynamically package their individualised products by combining different travel products (i.e. accommodation, transportation etc.)" - (Daniele & Frew, 2005).

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In Georgia, the online tourism if on the development stage and it is possible to say, that after a while it will get the important place in the economic development of the country. According to the development stages, for the first time, only the airline tickets reserving was possible, after hotels, bus tickets and etc. The most important which determines the request-delivery on the tourism market, is reveling of touristic features characteristic for our country, study of the online customers' requirements and providing of quick and simple quality travel products, which is really the advantage of the online-tourism.

The number of international visitors is growing monthly. According to the total data of 2016 year, the number of the international visitors amounted 5,406,188, which comparing to the previous year is 8, 1% more (http://stats.gnta.ge/Default.aspx). Basically the tourists are the representatives of the neighbor country. Growing of the tourist number is directly proportional to the tourism development. Accordingly the share of the tourism in GDP is growing annually and averagely amounts 6, 3%.

Share of Tourism in GDP

Periodicity: *Year* **Year:** 2016, 2015, 2014, 2013, 2012

Share of Tourism in GDP	2012	2013	2014	2015	2016	Total
Accommodation	*132.35*	*184.96*	*222.47*	*284.38*	*62.95*	887.12
Food objects	*378.23*	*341.22*	*373.18*	*409.55*	*112.84*	1615.01
Transport	*442.69*	*355.97*	*445.71*	*446.27*	*94.43*	1785.07
Travel companies	*415.74*	*492.24*	*545.30*	*704.16*	*168.36*	2325.80
Total tourism value added	*1369.02*	*1374.38*	*1586.66*	*1844.36*	*438.58*	6613.00
Total real GDP	*22505.29*	*23335.03*	*25095.69*	*27404.44*	*6414.86*	104755.31
Share of tourism in GDP	*6.08 %*	*5.89 %*	*6.32 %*	*6.73 %*	*6.84 %*	6.31 %

* Date of Data Update:
20.06.2016
* Next Date of Data Update:
20.09.2016

Source: http://stats.gnta.ge/Default.aspx

Also the number of the travel agencies is growing, most of which, carry out their activity in an online regime. According to the information placed on the webpage, the customer can easily and without much expenditure to plan and reserve the desirable tour. A lot of Georgian companies compete each other in an internet space, which gives the basis of service further improvement. Receiving of the information concerning tours and planning of the tours are possible via lot of WebPages, one of them is: www.turebi.ge, here is possible to receive information concerning different agencies, choosing of different tours and reserving of hotels.

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The most popular travel companies are: Global Travel, Liberty Georgia, Discover Georgia, Kera Travel, Good Travel, Non Stop travel and etc.

Few years ago, new interesting project added to the Georgian internet space, for reserving the air tickets. Georgian-Lithuanian project Fly.ge offers the online reserving and purchasing of air tickets to the customer. Fly.ge (www.fly.ge) is the flexible system, which gathers the information concerning the existing flights from the different systems. Accordingly the customer is offered the great choice and possibility to choose the best price. Unlike other similar systems, fly.ge is distinguished with the simplicity of use. Here, finding of the tickets, reserving and purchasing is much easier which is executed in 3 minutes. Reserving of the chosen ticket is free. Purchasing is carried out by the plastic card or via bank transfer. Except the air tickets reserving, the hotel reserving and car leasing is possible on the webpage. The web-page has got the online-consultancy system, which makes it more convenient for the visitor to purchase the ticket.

In order to reach the success in same field, the owners of the online companies should be attentive toward that issue as: correct order of the offered products, prices, complying with the consumers' interests. Management of the service level and maintaining are the most problematic topic for the Georgian companies, for elimination of which, the development of employees effective management strategy is essential, also the carrying out of specific teaching and motivation measurements. Everything is transparent in online regime; management of the team on high level is important, technically well operated webpage and payment form acceptable for everybody. The basic priority which the online companies have- is the time saving, that's why the maximum of the saved time of the customers determines the requirement on such market. The coincidence of the requirement and the delivery leads to the growing tendency of the travel online market development. In our article will be more detailed that if how is the state in Georgia concerning this and toward which challenges does our country face, on the way of online management development.

Foreign scientists and Georgian researches have interesting articles concerning the e-tourism role and its importance. On the basis of which, we will try to represent and develop our views, concerning the effective management of the same online systems.

To reach the success in the tourism field, the gross marketing is essential. The gross-marketing is modern and interesting marketing technology for the promotion of touristic products, which enables that, between those companies which are not competitor of each other on the same marketing mark, to be established the long term and serious relationships; this is the customers attracting whole system with the different directions"(Sekhniashvili, D. 2016)With the gross-marketing, both companies manage to popularize his own service and product, advertisement, which finally increases the sales. Different brand of the world applies to the gross-marketing. As the sources of the gross-marketing can be used: the cards of collecting the points, bonuses, gift or discount cards, discount certificates, or the mutual advertisement campaign for promoting the product on the service marketing. The basic condition of gross-marketing development is the interest toward the same targeted audiences.

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"The effective management of the tourism means such management, which enables the successful operation and development of each organizational and logistic cycle/link. Als

Keywords: Smart Tourism, Internet, Technology, Travel and tourism, Managements.

REFERENCES

Abad,M., Sorzabal, A.A., & Linaza, M.T. (2005). NOMENCLATOR- Innovative Multilingual Environment for Collaborative Applications for Tourists and Cultural Organizations. In A.J. Frew ed). Information and Communication Technologies in Tourism 2005 (pp. 79-89). New York: Springer-Verlag Wien.

Agarwal, S, Handschuh, S., & Staab, S.(2003). Surfing the Service Web. Lecture Notes in Computer Science, 2870, 211-226.

Albrecht, K., & Zemke, R. (1985). Service America! Doing business in the new economy. Homewood, IL: Dow Jones-Irwin.

Alfaro, I., Nardon, M., Pianesi, F., Stock, O., & Zancanaro, M. (2005). Using cinematic techniques on mobile devices for cultural tourism, Information technology & Tourism, 7(2),61-71.

Allison, A., Currall, J., Moss, M., & Stuart, S. (2005). Digital Identity Matters. Journal of the American Society for Information Science and Technology, 56(4), 364-372.

Anderson, R.E. & Srinivansan, S.S. (2003). E-satisfaction and e-loyalty: A contingency framework. Psychology and Marketing, 20(2), 123-138.

Bai, B., Hu, C., Elsworth, J., & Countryman, C. (2004). Online Travel Planning and College Students: The Spring Break Experience. Journal of Travel & Tourism Marketing, 17(2/3), 79-91
Bakos, J.Y. (1997). Reducing buyer search costs: Implications for electronic marketplaces. Management Science, 43(12), 1676-1692.

Bakos, J.Y. (1998). The emerging role of electronic marketplaces on the Internet. Communications of the ACM, 41(8), 35-42.

Baloglu, S., & Pekcan, Y.A. (2006). The Website Design and Internet Site Marketing Practices of Upscale and Luxury Hotels in Turkey. Tourism Management, 27(1), 171-176.

ISBN: 9788890824258

Bauernfeind, U., & Zins, A., (2006). The perception of exploratory browsing and trust with recommender websites. Information Technology & Tourism, 8(2), 121-136.

Baum, T. & Sigala, M. (2001). E-learning in hospitality and tourism. Education, Singapore's Knowledge Industry Journal, December, 32-34.

Baggio, R. (2014). Technological innovation in E-tourism: The role of interoperability and standarts

Dimitrios Buhalis (2008) "Tourism Management", International Centre for Tourism & Hospitality Research Bournemouth University, Talbot Campus

Dimitrios Buhalis, Aditya Amaranggana (2013) "Smart Tourism Destinations"

Dimitrios Buhalis1 , Maria Cristina Licata2 The Future eTourism intermediaries

Reino, S., A. Alzua-Sorzabal, and R. Baggio. "What Matters to the Industry? An Evaluation Framework for the Adoptability of Online Tourism Distribution Platforms." In Information and Communication Technologies in Tourism 2013 (Proceedings of the International Conference in Innsbruck, Austria, January 23-25), edited by L. Cantoni and Z. Xiang. accepted. Berlin - Heidelberg: Springer, 2013

Ricci, F., & Werthner, H., (2006), Recommender Systems, International Journal of Electronic Commerce , 11 (2), 5-9.

http://stats.gnta.ge/Default.aspx
http://gnta.ge/ge/tag/%E1%83%A1%E1%83%A2%E1%83%90%E1%83%A2%E1%83%98%E1%83%A1%E1%83%A2%E1%83%98%E1%83%99%E1%83%902016/
https://www.researchgate.net/publication/282971523_Smart_destinations_Foundations_analytics_and_applications
http://seu.edu.ge/wp-content/uploads/2016/05/Conference-2016.pdf
www.turebi.ge
www.globaltravel.ge
ww.discovergeorgia.ge

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BOOK OF ABSTRACTS

The role of the information systems in the risk management model (On the example of the customs system of Georgia)

Rusudan Seturidze
Assistant Professor of Economics, Department of IT in Economics and Business, Iv.Javakhisvili Tbilisi State University, Georgia
e-mail: rusudan.seturidze@tsu.ge
Corresponding author

Abstract

High developmental rate of the modern world has put the society before the new challenges, which can be solved by using new technological achievements. A very important role among them is played by the introduction and operation of the information systems.

Georgia, as an important transit country, has faced a number of problematic issues to solve, as the human, technical, material and non-material resources available in Georgia prior to the customs system reform failed to meet the contemporary demands. Before the reform, in the course of the customs registration of the imported or exported goods in Georgia, an inspector could either inspect, or not inspect the import/export goods, argue with a tax-payer about any detail, ask for some unreal documents, etc. at his wish. The customs procedure was prolonged for 2 to 10 or more days and the process of registration of any goods was accompanied by corrupted deals. An inspector had all reins to do such things.

In the period of the reform implementation, the following information systems were introduced in the customs system step by step:

- ASYCUDA (Automated SYstem for CUstoms DAta) Information System;
- PIRS – Entity Identification and Registration Information System;
- Government Finance Management Information System – Oracle Information System, etc.

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Introduction of ASYCUDA in 2007 made it possible to make steps to introduce the risk-based customs control mechanisms relevant to the EU customs legislation. Here, the risk was considered as the probability to violate the customs legislation of Georgia. Different risk profiles of the system are the combination of pre-determined risk indicators with its content gained through the analysis and classification of the obtained information and whose coincidence with the declared commodity data allows making a decision about the relevant measures of customs control (Seturidze, 2016, p.450). ASYCUDA system determines the degree of examination for the different types and categories of cargos. By using this software, during the registration of the commodity declaration, the system compares the data of the risk profiles under the declaration and the software, and in case they coincide, it takes the declaration to the corridor of the relevant color. The color of the corridor is determined by the essence of the risk profile and by a random selection principle. At present there are corridors of four different colors operating.

Green – means the release of goods without the office check of the declaration and enclosed documents or visual examination of the goods. Yellow – means the release of goods without the office check of the declaration and enclosed documents, but with visual examination of the goods Red – means the release of goods with the office check of the declaration and enclosed documents and with visual examination of the goods. Blue – means the release of goods without the office check of the declaration and enclosed documents or visual examination of the goods on condition of examining the validity of the documents and correctness of the charged tax amounts in the future.

After the system puts the declaration into the corridor of the relevant color, a customs officer receives an electronic notification about the measure to take, and the declaration is registered in a due manner.

In parallel to ASYCUDA Information System in the customs system, from 2010, they started to introduce Oracle Information System. This system is used to control the people crossing the border, identify the risks when a vehicle or traveler crosses the border, issue phyto-sanitary and veterinary-sanitary permits on the border, register crimes, confiscate the deprived property, search for the goods declared in advance, etc.

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Oracle Information System was made more elaborate with time to become one of the powerful information systems of customs control. At present, Oracle Information System and PIRS, which is used by the patrolling police when crossing the border are linked to each other thus simplifying the identification of the criminals at crossing the border.

One of the most important modules of Oracle Information System is the risk management module. Based on the data stored on the system, it identifies the risk profile for travelers and vehicles. The method used to identify the risks is the random selection principle, and the system, based on the old data, identifies the measure to take with the traveler or vehicle. The risk management module is made up of two major parts: risk identification and examination and risk card. It also has a simple search engine. Oracle Information System has three risk corridors: green, yellow and red. With the green corridor, no measure for an entity and he crosses the border freely. A yellow corridor means that a person had some problem when crossing the border (crime, sealed cargo, etc.) and it is necessary to examine him. In case of a red risk corridor, a person must be examined thoroughly.

In 2014, a member of the World Bank, the International financial Corporation (IFC), together with the United Nations Conference on Trade and Development, the works to update the customs information integrated system started/ The modernization and improvement of the system will lead to further improvement and simplification of the customs procedure (Seturidze, 2016, p.452).

At present, different meetings were held on the one hand, with the European Union and their member states and with the Georgia on the other hand, where the issues of improving the risk management remains one of the important questions among different issues (strategic frame format of cooperation in the field of customs; the process of harmonization with the customs legislations of EU and Georgia; protection of intellectual property on the border; administrative mutual assistance in the administration field; standards of origination).

In the risk management model, the new profiles are created, old profiles are improved or annulled permanently based on the data processing of the information systems, materials about the violation of the customs law, international conventions, information provided by different

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state bodies and different international organizations and international experience in the field of risk management.

Thus, the risk management model developed in the customs system, an important role was played by the introduction and efficient operation of the information system.

Keywords: Risk management model, information system, customs system.

REFERENCES

Automated system for customs data. From www.asycuda.org.

Meskhia I., Seturidze R., (2013). "The European Union's Generalized System of Preferences (GSP) and the Prospect of a Unified Database". World Academy of Science. Engineering and Technology. Barcelona ISSUE 82. pp. 445-449.

Ministry of Finance of Georgia. From www.mof.ge.

Seturidze, R. (2016). "Improving customs control efficiency through the automated risk control system", The international scientific conference "Challenges of Globalization in Economic and Business", Tbilisi: Publishing house "Universal", Georgia pp.450-453.

Seturidze, R. (2015). "Role of the informational technologies in the improvement of the state sector (on the example of the customs of Georgia)". Business Systems Laboratory. Third international Symposium Advances in Business Management Towards Systemic Approach. Italy, Perugia e-Book of ABSTRACTS Business Systems Laboratory. pp.11-13 ISBN: 9788890824227

Seturidze, R. (2014). "Information Systems, as one of the tools to improve the Customs System Management of Georgia", Refereed and Reviewed International Scientific and Practical Journal of the Faculty of Economics and Business Ivane Javakhishvili Tbilisi State university, N6, 101-118.

Seturidze, R. (2012). Information technologies in customs system. Secondary text-book, Tbilisi: Publishing house "Universal", Georgia.

Seturidze, R., Lekashvili, E. (2012). The reforms realized in the customs system of GEORGIA and CONTRADICTIONS, XVI IRSPM International Conference "Contradictions in public management" Managing in volatile times, p. 669, Rome Italy.

Seturidze, R., Paresashvili, N. (2012). Role of Information Technologies in Operational Risk Management, the 9th KIMEP International Research Conference (KIRC 2012) at Almaty, Kazakhstan. From https://www.kimep.kz/kirc/files/2012/05/BCB-proceedings.pdf#page=190.

Seturidze, R. (2011a). "New trends in development of Georgia's Economic border information systems". New trends of development of V4 Countries & Ukraine. III International Internet conference VOLYN INSTITUTE FOR ECONOMICS AND MANAGEMENT, Ukraine.

ISBN: 9788890824258

Seturidze R., (2011b). "Modern Information Technologies in customs System", Georgian Economics in the works competitiveness indicators: problems, perspectives, II inter-university Collection of Reports of Scientific-Practical Conference, Tbilisi, Georgia.

Seturidze, R., Tikishvili, M. (2009). „Realization of the customs control in Georgia based on risk analysis", Journal "Georgian Economics", #7-8, Tbilisi, 2009 http://geoeconomics.ge/?p=4068

Tax code of Georgia. From https://matsne.gov.ge/ka/document/view/1043717

United Nations Conference on Trade and Development. From www.unctad.org.

Web portal of the Revenue Service of Georgia. From www.rs.ge.

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BOOK OF ABSTRACTS

The systemic approach to teach safety in the workplace. A concrete example

Antonio Leva*
e-mail: a.leva@inail.it
Corresponding author

Rita Vallerotonda*
e-mail: r.vallerotonda@inail.it

Daniele De Santis*
e-mail: d.desantis@inail.it

** Permanent Research Scientist - Headquarters for Research, INAIL (Italian Workers' Compensation Authority), Rome, Italy*

Abstract

When it comes to occupational safety and health (OSH), organizational and behavioral critical points are often discussed. In fact, there are several tools that helps us to analyze this aspect.

These critical points are related to the choices carried out or feasible for individual (and therefore of the behavioral kind) or endorsed by the company management (and therefore of the organizational kind). Training courses must take this aspect into account.

Consequently, the question to ask is the following: how to orient, train and teach to make decisions in this field? It is necessary to develop educational tools to analyze the consequences and possible scenarios arising from the choices that have been made.

More specifically our research consists on the construction of models capable of simulating in the classroom the effects of the decisions and the mechanisms through which the same effects occurred.

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Generally speaking, our task aims to teach the culture of safety through the dynamic simulation. Within INAIL - Italian Workers' Compensation Authority - we deal with occupational safety and health and create tools in order to help companies to implement prevention and to facilitate training. Our ultimate objective is the prevention of accidents in the workplace.

By inserting the System Dynamics methodology in courses related to OSH, we aim to teach safety management techniques and to share a vision of prevention integrated with the business system and connected to other aspects of the company such as those related to human resources, production, organization, technology and economical aspects. The latter is a key issue since we learned from our personal experience that the majority of learners have never considered the relations that relate the OSH world with other business aspects.

It is also important to verify usefulness and effectiveness of the specific models used in the courses. In fact, any kinds of simulators can be considered both as a tool to build possible scenarios and as a system that stimulates learning and promotes the exchange of knowledge and information.

Our models are inherently suitable to be instruments that show different scenarios depending on the different choices that can be made. Moreover, these models have been designed by us for educational purpose.

Preliminarily tests on their efficency have proved to be effective in the classroom.

Experiments made by other scholars in other contexts show that some models or business-games are quite complex due to the number of variables, the interconnections between them, the dynamic behavior and the management of the user interface. The learners/players have not been able to understand these models. Therefore, in the context of the game, they took completely random decisions. As a result there was no teaching effectiveness.

The simplest models are often more understandable and more educationally useful and, most importantly, they do not exclude the possibility of adding complexity, if needed.

We have created various models on occupational safety and health (OSH) that suits teaching courses in the classrooms. Some are more complex, other more simple.

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In the last organized training course, we chose a relatively simple model: it was supposed to serve as an example we conducted ourselves to illustrate in a lesson regarding the System Dynamics and its educational potential.

The model focuses on the maintenance service, with related behaviors and decisions, and on the relations between the same service, the safety and the company's business budget, regardless of the formal compliance with the law. It was inspired by a case involving a fatal accident occurred while the victim was performing maintenance tasks.

Before the lesson, the model was proved through a test where we recruited some colleagues as learners experts both in training and in OSH, but not specialized in System Dynamics. Based on their observations, we have implemented the model by giving it a more appealing graphical interface, and by adding some economic variables, which in the simulation outweigh the benefits or disadvantages resulting from the decisions made.

The special educational purpose of the model is understanding the effects of certain decisions on the whole company system and in particular on the likelihood of accidents and on the company budget. Such decisions, which directly or indirectly affect the health and safety in the workplace, involve investment in new plants, the use of personal protective equipment and the amount of time dedicated to communicating between the maintainer and the company. Furthermore, two levers are provided to set the initial scenario in terms of company's safety culture and the maintainer’s seniority, in order to verify how the different starting situations produce different effects even with similar subsequent choices. Therefore through the various choices made in the simulated period, the player must achieve a satisfactory company status, both from the prevention point of view and from the economic point of view.

A lecture for the classroom was prepared to make it clear that there are certain tools (models and simulations created with the System Dynamics) that might be useful to educate about health and safety at work. It is not essential that the learners understand the whole structure and the individual model relationships. In fact, the primary purpose is to make them understand the underlying logic of these tools: the existence of the systemic thinking, the non-linearity of the relationship between cause and effect, the feedback and the influence of the ‘time variable’.

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This is how for the first time we brought the System Dynamics into the classroom in a training for trainers on OSH.

The educational tools we have shown might appear mainly oriented to corporate management, as they address the issue of choices and their impact on OSH. Actually, they are also useful in a classroom with workers or safety operators, since even individual worker make decisions that affect OSH. Moreover, learning the logic behind the methodology of System Dynamics is important for all people who deal with prevention in the workplace. The description of the lesson and the learners' reactions might cover these topics, as well as its arrangement.

Keywords: Occupational Safety and Health, OSH, Tools, Training, Prevention, Research, System Dynamics

REFERENCES

Campo, G., Guglielmi, A., Marconi, M., Pianosi, G. (2006). The reconstruction of the causes and dynamics of work-related injuries using the model "We learn by our mistakes". *Prevention Today*, 1-2(2006): 27-38.

Funke, J. (1995). Erforschung komplexen Problemlösens durch computerunterstützte Planspiele: Kritische Anmerkungen zur Forschungsmethodologie [Exploring complex problem solving by computer-based games: critical remarks about the research methodology]. Planspiele im Personal- und Organisationsmanagement. *Verlag für Angewandte Psychologie*: 205–216.

Goodyear, P., Njoo, M., Hijne, H., van Berkum, JJA. (1991). Learning processes, learner attributes and simulations. *Education & Computing* 6: 263–304.

Loucks, P., (2016). Model complexity - What is the right amount? Methods Adaptation. Retrieved November 10, 2016, from https://i2insights.org/2016/11/03/model-complexity/

Moizer, JD. (1997). System dynamic modelling of occupational safety: more suitable for learning or policy making? *Proceedings of the 1997 International System Dynamics Conference*. Istanbul, Turkey: System Dynamics Society.

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FINAL PROGRAM

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MONDAY, JANUARY 23, 2017

- **13,30 - 14,30 - REGISTRATION OF PARTICIPANTS**
- **14,30 - 16,00: PLENARY SESSION**
  - **14,30 - 15,00: WELCOME ADDRESS**
    - ***Gandolfo Dominici,*** Scientific Director Business Systems Laboratory;
    - ***Stefano Armenia,*** President System Dynamics Italian Chapter;
    - ***Fabio Nonino,*** Workshop Program Chair.
  - **15,00 - 16,00: *KEYNOTE SPEECHES***
    - ***Governance through Political Bureaucracy: An Agency Approach*** by ***Maurice Yolles***, Professor Emeritus of Management Systems at Liverpool John Moores University, UK.
    - ***Collective Affect Types arising in Social Systems***: by ***Gerhard Fink,*** Professor emeritus of International Business, WU-Wien, Austria.
- **16,00 - 16,30: COFFEE BREAK**
- **16,30 - 18,30: DISCUSSION SESSIONS**
- **18,30 - 19,00: SYDIC General Assembly**

- **20,15: SOCIAL DINNER AT ROYAL ART CAFÉ** (only for participants who registered for the dinner)

TUESDAY, JANUARY 24, 2017

- **09,00 - 11,00: DISCUSSION SESSIONS**
- **11,00 - 11,30: COFFEE BREAK**
- **PLENARY SESSION: 11,30 - 13,15**
- **11,30 - 12,30: *KEYNOTE SPEECHES***
  - ***Governance for Intelligent Organizations: A Cybernetic Contribution*** by ***Markus Schwaninger,*** Professor Emeritus of Management, University of St. Gallen, Switzerland.
  - ***Engineering the Enterprise*** by ***Kim Warren***, Director: Strategy Dynamics Ltd, UK, and Former President of the International System Dynamics Society.
- **12,30 - 13,15: MEET THE EDITORS ROUNDTABLE**
- **13,15 - 14,15: LUNCH**
- **14,15 - 16,15: DISCUSSION SESSIONS**
- **16,15 - 16,45: COFFEE BREAK**
- **16,45 - 17,45: DISCUSSION SESSIONS**
- **17,45 - 18,30: FINAL ROUNDTABLE AND FAREWELL**
- **18,30 - 19,00: BSLAB GENERAL ASSEMBLY**

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DISCUSSION SESSIONS
PROGRAM
MONDAY, JANUARY 23, 2017

- ***16.30 - 18.30***

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Complex Systems

Chairs: Maurice Yolles and Gerhard Fink

Room A5 – 16.30 - 18.30 pm

The Role of Weak Ties in the Emergence and Evolution of Alliance Networks - *Gabriella Levanti,* Assistant Professor of Business Management, *Arabella Mocciaro Li Destri,* Full Professor of Business Management, University of Palermo, Italy and *Giambattista Dagnino,* Full Professor of Business Management, University of Catania (Italy)

NSS to Support Optimal Social Agreements - *Thyago Celso Cavalcante Nepomuceno, Jadielson Alves De Moura, Ana Paula Cabral Seixas Costa,* Universidade Federal de Pernambuco Brasil).

Can we consider Stakeholder Networks CAS or MAS? An interpretative framework - *Mario Tani,* Assistant Professor of Business Management *and Mauro Sciarelli ,* Full Professor of Business Management , "Federico II" University of Naples (Italy).

Community centrality and inter-community detection in spatial networks - *Carlo Drago,* Assistant Professor of Mathematical statistics, University "Niccolò Cusano" (Italy).

State organization as complex system: explaining US election using mindset theory - *Maurice Yolles,* Liverpool John Moores University (UK) and *Davide Di Fatta,* PhD candidate, University of Messina (Italy).

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Technological Systems

Chair: Stefano Armenia

Room A6 – 16.30 - 18.30 pm

'How Many Times Should my Simulation Run?' Power Analysis for Agent-Based Modeling - *Raffaello Seri,* Associate Professor of Econometrics, Insurbia University (Italy) and Davide Secchi, Associate Professor of Associate Professor of Organizational Cognition, University of Southern Denmark (Denmark) .

The Transformation Toward Service Innovation of IT Firms - *Rich Lee,* National Sun Yat-Sen University (Taiwan)

Analyzing the diffusion of a multi-side ICT platform for urban logistics services: A System Dynamics approach - *Giulio Mangano,* Assistant Professor, *Giovanni Zenezini*, Ph.D. Candidate, *Anna Corinna Cagliano*, Assistant Professor, *Alberto De Marco*, Associate Professor, Department of Management and Production Engineering, Politecnico di Torino (Italy)

Examining the role of e-learning in promoting health awareness of young internet users (Case study: Girl students of Allameh Tabataba'i University) - *Ali Asghar Kia,* Allameh Tabataba'i University, Tehran (Iran),

Exploring the dynamical behavior of software systems quality attrib-utes throughout its evolution: A case study from the maintenance process perspective - *Stefano Armenia,* "Sapienza" University of Rome (Italy), *Eduardo Ferreira Franco*, and *Kechi Hirama*, Escola Politécnica da Universidade de São Paulo (Brasil)

Smart Model-based Governance: from Big-Data to future Policy Making - *Stefano Armenia, Massimo Mecella* "Sapienza" University of Rome (Italy), *Eduardo Ferreira Franco*, Escola Politécnica da Universidade de São Paulo (Brasil), *Riccardo Onori*, Business Process Management & Improvement (Italy).

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DISCUSSION SESSIONS

PROGRAM

TUESDAY, JANUARY 24, 2017

MORNING

- ***09.00 - 11.00***

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System Dynamics Applications

Chairs: Markus Schwaninger and Kim Warren

Room A5- 09.00 – 11.00 am

Mechanisms of meme propagation in the mediasphere: a simple system dynamics model - *Ugo Bardi, Sara Falsini* and *Ilaria Perissi,* University of Florence (Italy).

Interorganizational Collaboration Dynamics – *Edmundo Ortiz Romero, Margarita Castro González,* Arkansas State University—Campus Querétaro *(*México*), Ignacio J Martinez-Moyano*, Global Security Sciences, Argonne National Laboratory and Senior Fellow, Computation Institute, University of Chicago (USA).

Managing Changing Organization Process; System Dynamics Modeling towards Learning Organization - *Habib Sedehi,* Senior ICT Consultant (Italy).

Governance of Smart Clusters; the role of Proximity in Model-Based Governance - *Nathalie Lachapelle* and *Diane-Gabrielle Tremblay,* Téluq, University of Québec (Canada).

Sardinian dairy sheep supply chain: opportunities from a big data platform described with a causal loop diagram - *Alberto Stanislao Atzori*, Assistant Professor of Animal Science, Luca Saba, PhD Student of Animal Science and *Giuseppe Pulina,* Full Professor of Animal Science, Department of Agriculture, University of Sassari (Italy).

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Systemic Organization and Management
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Chairs: Gerhard Fink and Maurice Yolles

Room A6 – 09.00 -11.00 am

The challenges and opportunities of using the Industry 4.0 technologies for the integration of knowledge management processes through building collective networks of strategic intelligence - *Vasja Roblek,* Assistant of Research Methodologies and Health Management, Higher Institution Fizioterapevtika*, Maja Meško,* Associate Professor of Management, Faculty of Management, University of Primorska, *Vlado Dimovski*, Full Professor of Management and Organization and *Judita Peterlin*, Assistant Professor of Management and Organization, Faculty of Economics University of Ljubljana (Slovenia).

Intelligent managers require Systems Thinking - *Piero Mella,* Full Professor of Business Administration, University of Pavia and *Patrizia Gazzola*, Associate Professor of Management, University of Insubria (Italy)

Dynamic capability for multi-stakeholder management - *Piero Mella,* Full Professor of Business Administration, University of Pavia and *Patrizia Gazzola*, Associate Professor of Management, University of Insubria (Italy).

The spin-offs organization: A systemic view- *Walter Vesperi,* Phd student University of Messina*, Rocco Reina,* Associate Professor of Organization Studies, University of Catanzaro*, Primiano Di Nauta,* Associate Professor of Organization studies, University of Foggia (Italy).

Adaptive Manufacturing: Challenges to the Industrial and Scientific Community - *Luca Pazzi,* Assistant Professor *Marcello Pellicciari*, Associate Professor, Department of Engineering "Enzo Ferrari", University of Modena and Reggio Emilia (Italy)

Developments in Model-Based Trade Policy Analysis - *Nino Papachashvili, Associate Professor,* Faculty of Economics and Business, Iv. Javakhishvili Tbilisi State University (Georgia).

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DISCUSSION SESSIONS

PROGRAM

TUESDAY, JANUARY 24, 2017

AFTERNOON

- ***14,15 - 17,45***

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Systemic Organization and Management
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Chairs: Markus Schwaninger and Kim Warren

Room A5 - 14.15 -16.15 pm

Walking the talk: Catalyzing organizational values alignment - *Fabian Szulanski,* Professor of Systems Thinking, System Dynamics, and Innovation, Department of Innovation in Education, Instituto Tecnológico de Buenos Aires (Argentina) and *Douglas Breithart*, Independent scholar (USA).

Soft Methodology for Systemic and Viable Capitalization of an Organization driven by its Intangible Process Assets - *Maria-Isabel Sanchez-Segura,* Associate Professor, *German-Lenin Dugarte-Peña,* Researcher and *Fuensanta Medina-Dominguez,* Associate Professor, Department of Computer Science and Engineering, Carlos III University of Madrid (Spain).

Organization and function. Next key factors in organization theory and practice - *Steffen Roth,* Associate Professor of Strategic Management, La Rochelle Business School (France).

Service-script as an employee governance tool: Evidence from dual jobholders - *Gianfranco Walsh,* Professor of Marketing, Faculty of Economics, University of Jena and *Mario Schaarschmidt,* Assistant Professor of Technology and Innovation Management, Institute for Management, University of Koblenz-Landau (Germany).

The Growth in Bureaucratic Governance and "Meaningless Jobs": How does Systems Theory Respond? - *Michael Charlton,* Senior Lecturer in Business Systems, Sheffield Hallam University (UK).

Soft Skills and Job Opportunities of Migrants: Systemic Relationships in the Labor Market - *Roland Bardy,* Gulf Coast University, Fort Myers (USA).

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Sustainable and Social Responsible Policies

Chair: Stefano Armenia and Maurice Yolles

Room A6 - 14,15 -16,15 pm

A proposed model for new Socioeconomic Environmental Dynamics project - *Paolo Mazzara,* Sales & Proposals Manager, Kinetics Technology SpA (Italy) .

Risk management in a complex environment: a model based systemic approach - *Giovanni Paolo Sellitto,* Independent Scholar (Italy)

Towards a systemic perspective of the sustainable development goals through the Brazilian case- *Luciana Oranges Cezarino* Assistant Professor of Business and Management, Federal University of Uberlandia, *Omar Sacilotto Donaires*, Master Student, *Adriana Cristina Ferreira Cadana*, Assistant Professor and *Lara Bartocci Liboni*, Assistant Professor, School of Economics, Business Administration and Accounting, Ribeirão Preto of University of Sao Paulo (Brazil).

Corporate Social Responsibility Disclosure in the Banking System - *Ivan Nania* and *Davide Di Fatta,* PhD candidates in Economics and Business, University of Messina (Italy).

Perspectives of improvement in the dynamics of management of the vehicular flows in the great cities with the purpose to optimize the relationship social cost / benefits. A way to achieve the social good or to make cash? - *Luca Brancato,* Independent Scholar (Italy)

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Tourism and Place Systems

Chairs: Gianpaolo Basile

Room A5 - 16,45- 17,30 am

From Place Brand to "Place as Brand": a Systemic view - *Gianpaolo Basile,* Lecturer, *Maria Antonella Ferri*, Associate Professor, Universitas Mercatorum and *Gandolfo Dominici*, Associate Professor of Marketing, University of Palermo (Italy).

A systems approach on sustainable mobility of visitors travel behaviour case Chatuchak market Thailand - *Amphai Wejwithan,* PhD Student, Vienna University of Technology (Austria).

The importance of institutional assets for business models. The case of tourism industry - *Valentina Della Corte,*Associate Professor of Business Management *, Giovanna Del Gaudio,*PhD, *Chiara D'Andrea* and *Fabiana Sepe,* PhD Students, University of Naples "Federico II" (Italy).

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POSTER SESSION

MONDAY AND TUEIDAY, JANUARY 23, 24, 2017

- ***DISPLAYED ALL DAY***

- **Entrepreneurial University Model – Short literature review** - *Ineza Gagnidze,* Iv. Javakhishvili Tbilisi State University, Georgia.
- **Challenges of Entrepreneurial Attitudes and Business Activity in Georgia -** *Ia Natsvlishvili.* Tbilisi State University, Georgia.
- **The State Tourism Policy Model of Georgia** - *Marina Metreveli*, Georgian Technical University, Georgia.
- **The objective of the Company mission is based on the policy for enhancement of corporate social responsibility**- *Irina Gogorishvili*, Iv. Javakhishvili Tbilisi State University, Georgia.
- **About Marketing Process Model and Relationship Marketing**- *Maia Seturi* and *Ekaterine Urotadze,* Iv. Javakhishvili Tbilisi State University, Georgia.
- **Effective models formation of travel companies' management in Georgia** - *Zeinab Surmanidze* and *Ketevan Tchanidze*, PhD Students, Batumi Shota Rustaveli State University, Georgia.
- **The role of the information systems in the risk management model (On the example of the customs system of Georgia)**- *Rusudan Seturidze,* Iv. Javakhishvili Tbilisi State University, Georgia.
- **The systemic approach to teach safety in the workplace. A concrete example"**- *Antonio Leva, Rita Vallerotonda* and *Daniele De Santis,* INAIL, Italy

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