

Exploring firm renewal through the lens of innovation and product strategies

REPORT ON THE ENTIRE THREE-YEAR PERIOD /BESZÁMOLÓA HÁROM
ÉVRŐL – by Szabolcs Szilárd Sebrek Ph.D.

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Honorable Evaluation Committee!

In the present document, I am going to summarize the progress of my postdoctoral scholarship registered as PD16-121037 for the entire period 01 Oct 2016-30 Sept 2019. This report reviews the state of the three papers and some other publication-related successes, addresses impediments and scientific merits, and finally discusses the societal and economic use emanating from the research.

The principal objective of my research was to prepare articles that organically fit to the stream of international innovation and product strategy literature. My intention was to focus on writing papers with high value added that bear with solid theory and methodological background. The complete research plan for the three years was aimed to embrace crafting three distinct articles.

First article

The first article attempts to analyze the core processes of a successful Hungarian GIS software company, in which a new, more streamlined software development process was created in cooperation with the firm's software engineers. The topic relies heavily on the sophisticated management theory, called dynamic capabilities, further extending it. As I noted in my research brief last year, this paper was sent to Research Policy. I got a 'revise and resubmit', one reviewer was hostile acting against the paper, the other liked it pretty much. Based on their comments, I prepared the new version of the paper which was sent back to the journal. Although the paper enjoyed a major overhaul and got aligned to the comments of the reviewer team, it was finally rejected. Then I started to think how to proceed with the paper. I started a thorough search to involve a top US scholar as a coauthor. After several unsuccessful intents, I think I managed to persuade a really famous person to participate in the project. This person (whom I would like to keep anonym) has a paper in Strategic Management Journal, one in Journal of Management Studies, and 2 articles in MIS Quarterly. According to his perception, Research Policy was not an appropriate target journal, and better another outlet with focus on management information systems should be approached. Now, we are in the phase to reshape the article to the

specificities of this group of outlets and we believe that we can send the new version to a premier journal until the end of 2019.

As a matter of fact, the knowledge gained through this specific project allowed me to publish in *Vezetéstudomány* an article entitled as ‘*A szoftverfejlesztési folyamat átfogó észszerűsítése a vállalati dinamikus képességek lencséjén keresztül*’ with Zsolt. T. Kosztyán and Zalán Novák. Furthermore, I prepared another paper that addresses dynamic capabilities at WizzAir, the airline company with strong Hungarian links. Its title is ‘*Letettük a névjegyünket! Dinamikus képesség a vállalati növekedés szolgálatában: a Wizz Air esete*’. The goal of this article is to identify dynamic capability-driven thinking and management at Wizz Air airline which allows the company to operate profitably and continue developing under harsh international competitive market conditions. A main feature of our study is to illuminate the theoretical tripartite of sensing-seizing-reconfiguring from a practical standpoint. We found that the analyzed company has strong dynamic capabilities which manifest in idiosyncratic signature processes. The paper has been published this June in *Vezetéstudomány*.

Second article

I made a change to my original PD program. Earlier on I found out a call for a special issue of an excellent journal ‘*Industry and Innovation*’ entitled as ‘*Trademarks and their Role in Innovation, Entrepreneurship and Industrial Organization*’. Since the third paper in my PD application involved a paper on trademarks and innovation, I worked hard to submit it before February 28 2018. I received the reviewer reports and went through rounds of revision and finally my paper has been accepted. Let me note that reviewers provided excellent comments and it permitted me to prepare a strong new version of the manuscript. Its title is ‘*Overlap in external technology search locations and the breadth of IPR assets: Lessons from the Security Software Industry*’ and it has the following abstract:

This study examines the effect of intellectual property rights (IPR) on firms’ geographic overlap strategy of external technology search (ETS) compared to rivals. I reveal that firms are able to realise less intensity of geographic overlap in ETS locations compared to competitors and that this outcome is a function of the breadth of their upstream (generality of patents) and downstream (diversification of trademarks) IPR tools. Accordingly, I conclude that both covariates influence the spatial isolation of ETS vis-à-vis competitors. The effect of generality of patents on isolation, however, is more pronounced in comparison with diversification of trademarks at strategic technology alliances, meanwhile the reverse scenario is true at acquisitions. I also reveal relevant findings about resource-rich organisations defined as those with the broadest portfolio of such up- and downstream IPR assets within the industry.

Industry and Innovation is a journal with the 2018 impact factor of 3.157 and it has a high prestige in the field of innovation and strategy studies. **Concerning the current level of Hungarian business higher education, I consider my publication a huge international success! In fact, its success is even larger considering it is a solo paper!** Regarding colleagues,

only few – like Keszey Tamara, Krisztina Demeter - are capable of achieving the superior professional excellence.

Third article

In the prior periods I invested significant energy to prepare the last study of my PD proposal. The third article has the following title of ‘How competitive pressure, R&D slack and environmental conditions impact the degree of openness choice: The use of mixed logit models with random effects in panel data’ It seeks to explore the drivers of the rate of openness in firms’ innovation processes, underscoring the role played by scale economies, the existence of financial slack, and the confounding effects of key industry characteristics, such as the technology level of the industry, the complexity of open innovation landscape, the innovativeness of incumbents’ product portfolio, and the heterogeneity for the obstacles of innovation. I just came home from Manchester where I participated in 13th EIASM Colloquium on Organizational Change and Development, hosted by the University of Manchester. The EIASM is the acronym for the European Institute for Advanced Studies in Management. After my presentation, I received loud applause and great comments. I plan to fine-tune the manuscript till the end of this year and send it to a leading journal early next year.

A short and modified version of this research appeared in *Vezetéstudomány* (50, 7-8, 111-121) this summer entitled as ‘A nyitott innovációs stratégia megválasztása és az azt befolyásoló tényezők: egy nagymintás elemzés tanulságai’. Since this research is based on heavy statistics and econometrics, a methodology paper has been published in HUNGARIAN STATISTICAL REVIEW: JOURNAL OF THE HUNGARIAN CENTRAL STATISTICAL OFFICE (2, 90-113, 2019) entitled as ‘Review of the REBLUP method for estimating variance components under the nested error model’.

Some other publication successes

Let me share with the Honorable Evaluation Committee two excellent academic news that occurred to me. Our paper entitled as ‘28 years of traceability management: Trends, bottlenecks and opportunities’ was accepted by International Journal of Procurement Management which is listed as a Q2 journal in Scimago and C in the MTMT publication list of the Department IX of the HAS. I had excellent international coauthors, Jose A. Alfaro and Dirk J. Kamann who were also very happy about the acceptance of the paper. I have certain devotion to the field of logistics and supply chains, and this paper helped me to deal with this area of management. Furthermore, the knowledge acquired might provide a useful background to study the *Industry 4.0* movement.

Last summer, another paper was accepted to Strategic Organization by editor Prof. Robert Davis. This is a D1 (top decimal) journal in Scimago and B in the MTMT publication list of the Department IX of the HAS (2 years ago was an A by the way). The title is ‘Resource partitioning

and strategies in markets for technology' and is coauthored by Marco Giarratana (IE Business School) and Andrea Fosfuri (Bocconi University).

By having these papers and the one in Industry and Innovation, the total number of my academic points with regard to international publications that embraces the MTMT publication list of the Department IX of the HAS increased to 51!

Impediments

My internal situation has not not really been promising at the institute I work for. I really try to do my best (11 new courses in 6 semesters, excellent international publications and other papers in the pipeline), but unfortunately one of the leaders of the institute is making a lot of ugly and disgusting things against me. This already threatens my health and my family life to a great extent. I definitely will finish this post-doctorate scholarship and I will see what is going to happen. The future is quite dark at the moment. The salary is low and the working environment around me is against high-level academic work (notably at my department, the other two departments of the institute are one of the best in Hungary). The dean of the faculty and an academic doctor (head of the doctoral school) just saved in the last moment, so I could progress and finish my research.

Unfortunately, at the moment I could not provide support or approval for any younger Hungarians with Western phd in management to return to Hungary: buddy, better stay abroad! Yeah, I left a job at a private business school with a net monthly salary of 2100 euros, which now through these new publications would increase up to net 3000. The problems of the Hungarian higher-education medium are of course multi-faceted, but one thing is crystal-clear: there are many persons who hold key decision-making positions (e.g. head of institute) and are malignant. This means that they are seemingly support any renewal or the implementation of straightforward mentality, but in reality, they tend to oppose any change in an insidious way. If one knows some network theory, then the devastating effect comes just immediately: such a person can block the healthy functioning of the entire organization. My strategy has been to concentrate on teaching and research and hoping for miracle to occur.

As a further impediment has been the lack of trained business/management scholars in Hungary. I have great colleagues in tourism or in operations management, but there is no well-recognized Hungarian researcher in the wide area of business research who could have counseled me throughout the research project. This is a serious critique to the entire Hungarian business higher education.

As a final remark let me comment on the monthly amount of this scholarship. I am really grateful for having it. Nevertheless, it has been originally tied to the salary of associate professors. This later amount was recently increased in Hungary, but unfortunately the amount

of this scholarship was intact, meaning that its recent value is about the same as the assistant professors' (more or less 10.000 Ft more); and the difference represents around net 500.000 Forint annually which is a great deal to me. I believe that NKFIH shall provide more monthly support to the scholarship that aims to retain in Hungary her best young researchers.

Scientific merits

One can name several scientific merits regarding my research. Unfortunately, strategy and innovation study are in her childhood phase in Hungary. It lies in contrast to Western Europe and North America in which these are central topics in business schools, offering the best paid positions. These topics cover open innovation, external technology search, economic geography, company routines and transformation, and intellectual property rights. Second, I attempt to lay down a sophisticated theory background and set up hypotheses for my studies – again according to western standards. Technology- and IPR-related theories or dynamic capabilities come forward in the above articles. Let me insert the third hypothesis in the paper forthcoming in *Industry and Innovation*: *'Hypothesis 3a(b). If both members of a firm-pair are resource-rich in their generality of patents (diversification of trademarks), and exhibit multiple contacts in their market niches, then they will have more intensity of geographic overlap in ETS locations with each other'*.

Third, I extensively use statistics and econometrics in my studies. This embraces panel datasets and variable creation, as well. For instance, the last paper on openness choice embraces not only a simple multinomial logit model but the application of random effects which widens the scope of analysis, permitting its study under various environments.

Since these traits have not been common in Hungarian business research community, there must be a tremendous value addition. I hope one day I could give classes in a phd program in order to train future generations.

Societal and economic use

I deem my research presents a high degree of societal and economic use. The first research addresses a Hungarian SME that develops geographical software products for sale to a wide audience (including both the public and private sector). For SMEs, corporate adaptation and transformation are a crucial issue, especially in high-tech settings that presents potential feasibility challenges. This was the basic assumption which had been justified. The only remedy for them is that they could resorts to external partners that are cheap and willing to work closely with them. Therefore, one recommendation for Ministry of Information and Technology (MIT) is provide additional funds for technical universities, research labs and R&D agencies (like Bay Zoltán that works similarly to the German Fraunhofer Institute).

The second study sheds light to the importance of nurturing intellectual property protection to technologies, products and brands. This makes local, often small but technologically viable

firms to find prestigious, cash-rich partners that can support them in technology refinement to address market needs and to commercialization. In this sense, it doesn't matter if a Hungarian SME finds an external partner as the core issue is to get to market and to form part of an international network and the market for technologies. Again, MIT with specific funds can co-finance the cost of joint applied, market-focused research with both foreign and Hungarian partners.

The phenomenon of open innovation has been mainly studied by case studies or by small and biased corporate samples. In contrast, we addressed this issue by applying a large sample size. Therefore, the first merit is the application of relevant econometric technique to analyze such complex panel datasets with several variables and under different environments. I believe that this know-how could be applied in other Hungary-related innovation, strategy and ICT fields (i.e. industry 4.0). Second, we identified in case of Spanish companies that they tend to apply fully open and semi-open innovation modes vis-à-vis the traditional closed type, but they might face serious impediments. Based on my general judgement on the similarity between Hungary and Spain, our government could tackle these obstacles by the provision of innovation funds, especially to the SME sector. One of our result is that smaller sized SMEs would like to collaborate with one other, but external funding elevates a large obstacle toward becoming more open. Third, our study also points out and this is a common feature with the first paper, discussing the case of a Hungarian software SME, that often wrongly ingrained habits and routines just stand against any organizational renewal. Therefore, I deem necessary that ITM launches training programs especially for SME managers and owners which could change their mindset teaching them innovation and technology management strategies.

Concluding remarks

By the end of the third year, I managed to publish one paper in an internationally leading management outlet; I have two other papers in a developed stage that is suitable for sending to a journal soon. I also published three related articles in *Vezetéstudomány* and one in *Hungarian Statistical Review*. In all four cases I denoted NKFIH as the funding agency for my project with the following text: 'I gratefully acknowledge financial support from the Hungarian National Research, Development and Innovation Office (PD16-121037).'

For these reasons, I would like to ask for the support of Honorable Committee to the successful termination of my research project.

Yours sincerely,

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