Networking Intellectual Capital towards Competitiveness: An Insight into the European Higher Education Institutions

Elena-Mădălina Vătămănescu[1], Diana-Luiza Dumitriu[2], Andreia Gabriela Andrei[3], Cristina Leovaridis[2]
[1]Faculty of Management, National University of Political Studies and Public Administration, Bucharest, Romania
[2]Faculty of Communication and Public Relations, National University of Political Studies and Public Administration, Bucharest, Romania
[3] "Alexandru Ioan Cuza" University, Iasi, Romania
madalina.vatamanescu@comunicare.ro
diana.dumitriu@comunicare.ro
andrei.andreia@gmail.com
cristina.leovaridis@comunicare.ro

Abstract: Today, the interplay between the network society and the knowledge society have provided an overarching perspective on how global interconnectivity and knowledge transfer cannot be separated anymore. The advancement of technological opportunities and the openness towards knowledge acquisition have reconfigured the landscape of human collaboration. As a premise of achieving sustainable competitive advantages, organizations should reconsider the value of the social and information exchange within their networks, facilitating organizational learning and proper response to the field dynamics. Against this backdrop, the present paper addressed the viewpoints and practices of academics from European higher education institutions in regard to leveraging the intellectual capital within their online social networks. Stressing on subjects from European developing countries, the research advanced a new concept - the network-based intellectual capital – liable to account for an emergent capital reification and relied on an interview-based survey with 27 professors. As the findings showed, although acknowledged as a paramount competitive advantage, the network-based intellectual capital is yet to be properly capitalized.

Keywords: network-based intellectual capital, higher education institutions, competitiveness

1. Introduction

In a dynamic, complex and highly competitive environment, the postulate "knowledge is power" has become more and more topical. As Grimaldi and Hanandi (2013) concluded, a plethora of authors have acknowledged the fact that organizational knowledge is more important than organizational property, a fact which points out to the significance of intangible assets and of the intellectual capital, in particular. It is in this line that Bohlander and Snell (2007) and Sumedrea (2013) link the intellectual capital with firm's welfare and efficiency, the former being approached as a key driver for organizational progress.

Furthermore, when discussing about the competitive capabilities of an organization, Pogarcic et al. (2012) consider them as paramount factors of organizational performance. His view on competitive capabilities is directly connected with the exploitation of intellectual capital in terms of people's experience, new projects and ideas, innovative endeavors, etc., all of them concurring towards achieving overall organizational effectiveness.

Pursuant to Pogarcic et al. (2012), other researchers (Harreld, O'Reilly and Tushman, 2007; Sequeira et al., 2013; de Biazzi, 2013) also highlighted the interplay between different forms of intellectual capital reification and organizational competitiveness, some of them bringing to the fore the pertinence of "dynamic capabilities". In this front, the most efficient organizations benefit from highly-skilled employees whose performance simultaneously derives from collaboration and empowerment, autonomy and decentralization. Moreover, the human resources' propensity towards learning and evolving within the organizational framework - by knowledge sharing and dissemination processes - lies at the core of the organization's adaptive and generative knowledge. This situation leads Malone (2004) to the conclusion that collective intelligence is supported by the proper capitalization of the information technology, a catalyzer of interaction and network generation.

Starting from these premises, the present work aims at investigating the approaches of professors from European universities (situated in developing countries, classified by the International Monetary Fund, 2014) on the capitalization of the intellectual capital brought about by specialized online social networks. The main assumption is that specialized online social networks should be seen as knowledge wellheads in terms of the human, structural and

Reference this paper as: Vătămănescu E, Dumitriu D, Andrei AG, Leovaridis C. "Networking Intellectual Capital towards Competitiveness: An Insight into the European Higher Education Institutions" *The Electronic Journal of Knowledge Management Volume 13 Issue 3 (pp228-239)* available online at www.ejkm.com

relational capitals and should be properly exploited with a view to personal improvement and, inherently, to organizational development.

2. Literature review

2.1 Overview of the intellectual capital primacy

The intellectual capital as a prominent research interest has been consolidated by several authors' major contributions. In this point, Brătianu and Orzea (2013: 214) have underlined some of the most important studies which supported the advent and development of the new research field. Among others, authors like Edvinsson and Malone (1997), Sveiby (1997), Stewart (1997) are credited for settling the framework for compelling research directions and perspectives. Moreover, as Brătianu (2007) posits, the intellectual capital issue has known different approaches over time, Edvinsson (2002), Roos et al. (2005), Johnson et al. (2011) bringing forward a dynamic view on the organizational intangible assets. Assumed either as a stock or as a flow (Adriessen, 2004; Alcaniz et al., 2011), the intellectual capital has set itself up as a source of competitive advantage, stimulating the organization's change and adaption in a versatile and hard to predict environment (Halawi et al., 2005; Ammann, 2010).

The regeneration of the intellectual capital highly relies on the organization's innovative efforts and learning predisposition whereas new knowledge replenishes the advancement of the overall intangible resources. In this respect,
Senge (1999: 14) defined a learning organization making use of its inherent potential to craft the future according to its objectives of development, not only of survival. As Bogner & Bansal (2007) and Martínez García de Leaniz and Rodríguez del Bosque (2013) also conclude, this type of organization is characterized by the capacity to go beyond adaptive learning and to foster generative learning. Thus, organizational knowledge derives from the innovation-driven endeavors and from the integration of people's various knowledge wells on purpose to develop collective assets (Hislop, 2009; Cardoso et al., 2012).

Even though a wide range of conceptualizations and research directions on intellectual capital have emerged over time, three major dimensions were summarized, as Dean and Kretschmer (2007) mentions. As a first component, the human capital depicts the intelligence of the employees, of a highly-skilled workforce which may be valued as a source of innovation and whose dynamic capabilities push the organization towards renewal and development (Skandia, 1996; Bontis, 1998). The second component resides in the structural capital and consists of "all the non-human storehouses of knowledge in organizations" (Bontis, 1998: 88). Here, the author includes all the organizational assets whose value to the organization exceeds the material worth (e.g. charts, databases, strategies, processes, operations, manuals, etc.). The third component refers to the relational capital and is illustrative of the relationships with all the relevant stakeholders, be they internal or external. Hormiga et al. (2011) reveal that the relational capital is a proof that organizations are dynamic open systems, actively connected with the entire environment where they operate. This is why Martin de Castro et al. (2004) believe that this particular dimension of the intellectual capital is the most salient organizational resource, as its main role is to purposefully create network structures.

A similar approach is found in Nonaka and Takeuchi's (1995) spiral model for stimulating the organizational knowledge which includes two intertwined categories, namely the epistemological axis, consisting of tacit and explicit knowledge and the ontological axis, comprising individual, group and organizational knowledge. Addressing the dialectic of tacit and explicit knowledge, Davenport and Prusak (2000) and Holden and Glisby (2010) described them in terms of knowledge potential versus knowledge transfer or as potential capacity versus operational capacity (Brătianu, 2013).

The discussion is also relocated in the context of the SECI model whose dimensions - socialization, externalization, combination and internalization (Szulanki, 1996) – may be considered as stages of the organizational knowledge development. Within the model, socialization implies good practices and expertise transfer among employees as a generous and trust-based endeavor whereas externalization refers to the reification of knowledge potential through words and images. Next, combination gives way to the explicit knowledge exchange in the organizational realm, the information and communication technologies supporting the sharing of new ideas and projects and enhancing the interplay between external and internal knowledge entities and processes.

The intellectual capital is renewed at the confluence of the organization's dynamics and environment's inputs, the organizational landscape being progressively reconfigured. Then comes internalization, as a final stage which sustains the transformation of the acquired explicit knowledge into the individual's implicit knowledge. It is in this particular

point that the new organizational knowledge is converted into a personally-assumed knowledge by each member in accordance with his/her ability and competences, as Nonaka et al. (2008) pointed out.

2.2 The prerequisites of a new concept: The network-based intellectual capital

As indicated in the previous section, combination stands for a many-sided conversion process which leads to the formation of different network configurations. Through combination, various remote components are reorganized into an articulated whole, starting from the individual entities towards the organization and then to a more complex structure, that is the social network. At this level, the SECI framework primarily addressed the knowledge transfer and acquisition from person to organization (Nonaka et al., 2008), the inter-firm perspective remaining in an incipient stage.

Against this backdrop, the current study advances a new outlook on the way social networks facilitate the organization's purposeful actions within and beyond its boundaries. The prerequisites of this overview lie at the core of the dynamic network theory which underscores the functions of social networks in terms of goal attainment at all the organizational levels (Westaby, 2012). This new perspective embodies the opportunity to form and cement internal and external relationships, keeping in mind the existence and influence of a collaborative setting (Nowicka, Dima and Ștefan, 2012). The power and viability of the network rely on the strong connections between actors who share a certain purpose and enjoy adding value to a collective entity. In this respect, Westaby (2012) asserted that the influence of social networks is yet to be discovered all the more so as they have the power to dramatically change people's lives.

Another prerequisite for developing a network-driven approach comes from Carley's (2002) studies which addressed social networks and knowledge management within an integrative framework. The author proposed a new concept, namely "meta-matrix", in order to depict a multiplex configuration of actors and elements (i.e. individuals, knowledge, events, etc.) and the ties among them. The understanding of this representation may be operationalized through simple examples – community members share the same resources and have to fulfill similar tasks for the sake of their community, thus supporting the emergence of strong bonds within a network structure. In this vein, Carley (2002) speaks about the "multi-agent network" characterized by active members who co-participate to the network's development by taking action, garnering and transferring information, discovering and transmitting ideas, learning and sharing as knowledge nodes. Through their actions, the actors make the network stronger and tenable and the inherent connections become more powerful and viable (Westaby, 2012).

The patterns of evolved network structures may be identified in the context of multi-agent technologies which catalyze the advent of online social networks as genuine aggregations relying on similarity, attachment, shared visions and goals, etc. Going beyond group and organizational constraints, this new type of association brings together, in an interactive environment, people, information, knowledge, projects, skills, competences and expertise, potentiating collective learning and intelligence (Soto-Acosta, Colomo-Palacios and Popa, 2014). Consistent with this approach, authors like Welch (2005) and Adler, Heckscher and Prusak (2011) have underlined the advantages and opportunities brought about by collaborative environments and by purposefully acting towards achieving the same goal and building up a collaborative culture.

In line with the aforementioned considerations and acknowledging the importance of a network-based perspective when analyzing the dynamic relationships between in-group and out-group actors or elements, we propose a new conceptualization of the intellectual capital. The new frame of reference is given by the network metaphor which is liable to reflect the dynamics of an interactive macro-setting linking individuals, events, knowledge resources, etc. Hereby, the concept of "network-based intellectual capital" is meant to describe the reification of the intellectual capital on an extended groundwork, where the person's micro-universe meets the system's macro-environment. At the same time, the network-based intellectual capital embodies a twofold purpose – the member's goal to access the network's resources for personal cultivation and the organization's goal to cement overall performance and development through cross-organizational networking.

Given the focus of this paper, we will address the online social networks as the framework for intellectual capital analysis. Our choice gives credit to Ordóñez de Pablos' (2013) conceptualization of the knowledge economy which may be defined by five main attributes: it is highly concentrated on intangible assets; it is contextualized by a highly competitive business environment; it is digital; it is virtual; it is networked.

2.3 Intellectual capital and higher education organizations

Over the years, the approach on the intellectual capital has been focused on cases of for-profit companies as an effort to bridge the research results with the business practice. Nevertheless, recently, new research directions emerged as scholars have understood the importance of sounding out the issue within a non-profit context, such as academia. The new stream of research was highlighted in Ramírez Córcoles and Vanderdonckt's (2013) studies which gave credit to the substantive contributions of Leitner and Warden (2004), Mouritsen et al. (2004), Cong and Prior (2008), Alwert et al. (2010), Ramírez (2010), Wu et al. (2012), Brătianu (2013), etc.

In this vein, Sánchez et al. (2009) consider that higher education institutions go through a particular phase where competition has become of the essence. In a world defined by the primacy of the knowledge economy (Kok, 2007), universities are prone to open themselves to both adaptive and generative learning, to identify and capitalize various and original knowledge sources as an inherent enterprise to stay in the game. This situation simultaneously defines the imperative for higher education institutions in developed and developing countries which strive to achieve viable competitive advantages. Among others, a highly-qualified workforce is required in order to create, catalyze and share new knowledge deliverables. The proper leverage of dynamic capabilities in academia is the main facilitator of organizational innovation and of the entire system's development (Kok, 2007; Brătianu, 2009; Sánchez et al., 2009).

The investigation of the intellectual capital within universities has become topical given the mission of higher education institutions in "handling" knowledge in terms of knowledge generation, dissemination, acquisition, sharing and innovation. At this level, Ramírez et al. (2007) and Ramírez Córcoles et al. (2011) urge that placing the intellectual capital issue in the framework of universities should be considered a priority and, thus, researchers should focus on both non-tangible and non-physical resources and assets, including here all the inherent processes, competences, skills, abilities, patents, networks and collaborative environments.

Likewise, Gorgani et al. (2014) deem that higher education institutions should take into account new opportunities with a view to improve their structure and processes. The authors bring to the fore the imperative for universities to assume a strategic thinking and to leverage the knowledge potential and patrimony available within networks of collaborators. Hence, the only way to be competitive in a highly challenging academic environment is to support the innovative enterprises of the organization's members, to encourage the development of their abilities and competences, to stimulate their interactions and knowledge sharing with well-reputed scholars in the field. The university management should act as a catalyzer towards achieving these goals by resorting to articulated strategies and programs meant to improve the teaching staff's proficiency.

From Assi Ahmed Al-Dujali's (2012) standpoint, each member of higher education institutions is responsible for selecting, accessing, acquiring and disseminating pertinent knowledge as a purposeful endeavor to improve his skills and acumen and to co-participate to the network's evolution and performance. Both tacit and explicit knowledge are the basis of organizational progress and, implicitly, of the competitive advantage achievement. This perspective is also assumed by Gorgani et al. (2014) who conclude that sharing knowledge among different institutions and being open to acquire knowledge from the more developed entities should be considered a key driver for innovation in academia, all the more so as high performance universities are the ones which best harness their intellectual capital.

Starting from these considerations, the following research questions arise: 1) Do professors / researchers from European universities capitalize the network-based human capital with a view to self-improvement?, 2) Do European universities from developing countries encourage (formally and/or informally) the exploitation of a network-based structural capital with a view to organizational development, and 3) Do professors / researchers from European universities take advantage of the network-based relational capital with a view to self-improvement and organizational development?.

3. Materials and methods

3.1 Participants

The sample comprised 27 participants (scholars aged between 25 and 49, 9 males and 18 females) holding various academic positions within universities from European developing countries, ranked on the first five positions in the national classifications. Participants were recruited from different specializations and academic fields.

3.2 Procedure

In order to capture detailed and in-depth descriptions of the participants' experiences we chose to use semi-structured interviews. This option catalyzed the opportunity to discuss some topics in a more detailed manner and the descriptions were further explored through 'probes'. We considered individual interviews more valuable to provide detailed information about the meaning of the situations and of the social contexts to each participant in the setting. The interviews were conducted during an international conference organized within the university. Questions were posed in a relaxed informal manner so that the interview appeared more like a discussion or conversation. The respondents were explained the purpose of the interview and were encouraged to co-operate. Still, they were not given too much detail that would have biased their responses. The objective was to uncover the widest range of meanings held by the participants in the setting. The respondents were assured of their confidentiality and anonymity in the aggregated findings.

The structure of the interview followed Seidman's (1998) three-phase qualitative interview: focused life history (the respondents' experiences were put in context, by asking them to provide as much information as possible about themselves, in relation to the topic of the study); the details of experience (concrete details of their present experience in the research topic area); reflection on the meaning (reflection on the meaning of their experience, how they make intellectual and emotional connections with the experiences that are the subject of the research topic). The answers to the interviews were categorized by carrying out a thematic analysis as a systematic way of identifying all the main concepts which arose in the interviews, and of developing them into common themes.

3.3 Measures

The analysis was focused on three main measures: the network-based human capital (the individual knowledge stock of online social networks which is represented by its members; professors and scholars as knowledge entities), the network-based structural capital (channels of accessing information on academic news, events, publication opportunities, research projects of scientists from a certain area of interest; institutional policies and strategies for capitalizing the online knowledge resources) and the network-based relational capital (web tools found to be effective for keeping in touch with other researchers in the field; the exploitation of online academic networking and knowledge sharing via online social networks).

4. Findings and discussion

Focusing on how respondents usually find out about academic news, events, publication opportunities or research projects from their area of interest, we identified two approaches. The first one is revealed by experienced respondents: professors, associate professors and lecturers who attend many national and international conferences, those who publish papers in scientific journals and receive invitations and newsletters on a common basis (*I am always in touch with what is new from monthly newsletters of different scientific associations, e-mails from conferences organizers or scientific journals* - R1 (Lecturer, PhD, 37, Communication, Romania); *I find out key issues from newsletters, invitations and direct conversations with others* - R13, Professor, PhD, 46, Business, Bulgaria). Having a more consistent scientific activity then their younger colleagues is thus correlated with a higher academic network connectivity that allows for a constant updating process in terms of scientific opportunities and calendar of events. The second approach is supported by young researchers: assistants and PhD candidates who receive information from their coordinators and colleagues, or by own Internet exploration, but rarely from specific scientific networks, such as Academia.edu or ResearchGate.net (*Most of the time, academic news is sent to me via e-mail. Either my PhD coordinator sends it to me or one of my close colleagues. I also find this information on social media, when one of my colleagues shares it online* - R11, Assistant professor, PhD candidate, 27, Communication, Romania; *I mostly use the Web to find news, sometimes I receive them via e-mail* - R7, Assistant professor, PhD, 31, Management, Romania; *I usually find out about academic news from colleagues - conversations or e-mail, or from specific websites such as Academia.eu, ResearchGate* – R10, Assistant professor, PhD, 29, Communication, Romania). We would argue that this is rather a scientific exploration phase that allows young researchers to get familiar to the overall dynamics of the field. Sources as the university websites, faculty newsletters, etc. are seldom mentioned, attesting to the low organizational support in this regard. Irrespective of the experience or position within the faculty, the great majority of the interviewees estimated that 10-20% of the aforementioned information reached them via offline communication. Further, as far as direct mailing and online resources (such as academic networks, websites, news feeds or groups membership) were concerned, the answers varied according to the respondents' seniority and position: young respondents (PhD candidates, assistant professors) estimated that they receive 10-20% of useful information via direct mailing compared to the 60-90% reported by the experienced respondents (lecturers, associate professors, professors); young respondents receive 60-90% of the professional information via online resources

compared to the only 20-30% reported by the experienced respondents. As expected, young academics prefer online resources, while those with experience point to direct mailing (estimated percentages: *10% via offline communication, 80% via direct mailing and 10% via online resources* – R3, Associate professor, PhD, 36, Telecommunications, Romania; *10% via offline communication, 70% via direct mailing and 20% via online resources* – R9, Associate professor, PhD, 49, Economics, Romania).

When referring to the Internet / web tools (excepting e-mail) which were found to be effective for keeping in touch with people, happenings and updates from their academic field, most respondents - regardless of seniority or position in the faculty - mentioned Facebook (16 mentions) and LinkedIn (11 mentions) social networks. Other web tools were scarcely listed: Google / Google + / scholar.google.com (6 mentions), Academia.edu (4 mentions), ResearchGate and conferenceallerts.com (3 mentions each of them), ScienceDirect (2 mentions), Scopus (1 mention) etc. We can thus argue that the general popularity of a social media platform is more or less transferred into the academic field, providing them these leading positions (see Facebook and LinkedIn).

Independent of their experience and academic rank, the subjects' main reasons to access academic networks, in a descending order of importance, were: "to find what is new in my field", "to have access to recent publications in my field", "to find out about important academic events in my field" (as the first three most mentioned options), "to be informed and to use the information for self-improvement", "to follow well-reputed scholars in my field", "to establish connections with researchers from well-known universities", "to be connected with peers from similar universities", "to keep open channels", "to comply with the university's policies" and "to maintain an active online profile" and other reasons as *Tourism* – R22, Lecturer, PhD candidate, 35, Business, Hungary; *To communicate my own opinions, experiences, points of view etc*. – R4, Assistant professor, PhD candidate, 40, Communication, Romania; *To improve my skills* – R17, Assistant professor, PhD candidate, 35, Economics and Sustainable Development, Albania). Looking a this ranking in terms of general categories of motivations, it can be notices that the reasons that are related to maintaining themselves updated and getting access to new and relevant information seem have priority over the network-related aspects.

Over three quarters of respondents follow the scientific activity and publications of well-known scholars and researchers in their field of interest, in order to be informed, to update their knowledge in their field of research, considering this "*not only to be very important, but some kind of an obligation or an example of best practice in the field*" (R4, Assistant professor, PhD candidate, 40, Communication, Romania). Other reasons varied between experienced, PhD researchers who exploit novelties for elaborating and updating their courses, papers etc. (*to use the information for workshops and courses* – R3, Associate professor, PhD, 36, Telecommunications, Romania; *I would like to improve my research methodology; also for updating my readings* – R6, Assistant professor, PhD, 30, Communication, Romania; *the most important activity when I'm trying to write a scientific article is to consult the bibliography and scientific resources* – R8, Assistant professor, PhD, 33, Communication, Romania; *in order to keep updated with field innovation* – R20, Associate professor, PhD, 45, Management, Albania) and young PhD candidates who use the new information for preparing their PhD thesis (*I follow their new posts and works as their topics are closely related to my interests and I identify new standpoints for my thesis* – R11, Assistant professor, PhD candidate, 27, Communication, Romania; *I follow the activity and publications of well-known scholars as an endeavor of updating my thesis* – R22, Lecturer, PhD candidate, 35, Business, Hungary). Only four respondents answered that they have not followed the scientific activity and publications of well-known scholars and researchers in their field, because of the *lack of time* (R2, Assistant professor, PhD candidate, 25, Communication, Romania) or because he/she searched for information *only when a specific need emerged* (R27, Lecturer, PhD, 30, Communication, Romania) or because *it was difficult* (R16, Assistant professor, PhD, 40, Economics, Poland).

Referring to the universities' involvement in encouraging researchers to network with well-reputed scholars or higher education institutions, a third of the interviewees (9 respondents) admitted to be informally advised in this respect (*Occasionally, mainly in an informal manner* – R13, Professor, PhD, 46, Business, Bulgaria). Another third (8 respondents) reported not having received any guidance on this issue (*Not really, it is more a personal endeavor* – R20, Associate professor, PhD, 45, Management, Albania), as few faculties employ official policies and offer support to researchers to network with other scholars (*through research laboratories, Erasmus for teaching staff* – R6, Assistant professor, PhD, 30, Communication, Romania; *through financial support for conference participation and organization and publications* – R8, Assistant professor, PhD, 33, Communication, Romania). Only three respondents argued that their institutions encourage academic networking and knowledge sharing both formally and informally (*Academic networking is encouraged both in a formal and in an informal manner. The university organizes international conferences and projects providing opportunities to interact with researchers from other countries. But professors are*

also advised to establish new contacts and strong personal and professional relationships on their own (R10, Assistant professor, PhD, 29, Communication, Romania). However, even in these cases, it is less about an active involvement from the university' s part and more about a simple recommendation position that leave the whole process and responsibility on the individual part.

The respondents' assessment of academic networking as a potential competitive advantage brought about a specific pattern. Although all the subjects acknowledge the importance of international networking, not all of them actively exploit its benefits. The imperative of making the most out of professional networking is blurred by the "lack of time" and "lack of prioritization" arguments. *It's a pity that we are not educated to use the available resources. We fail in using the opportunity of learning from the best in our field because of paying heed to marginal priorities* (R3, Associate professor, PhD, 36, Telecommunications, Romania). Some respondents accuse the lack of organizational involvement in creating an institutional framework for academic collaboration – *Academic networking is undoubtedly a source of competitive advantage – it can lead to collaboration on research projects, on co-authorship of high quality research, even in ISI journals, on thematic conferences, etc. Still, everything would be easier if supported by our universities* (R8, Assistant professor, PhD, 33, Communication, Romania).

Nevertheless, a few subjects reported to have capitalized the advantage of academic networking for self-improvement and for organizational development at the same time - *Based on the information received through my academic networks, I initiated new research projects, I elaborated papers on new directions, I brought innovation to the Romanian literature in the field* (R1, Lecturer, PhD, 37, Communication, Romania); *I could publish co-authored articles with the scholars interested in my work and receive better reviews from the scientific committees of certain journals. Also, the co-authorship with scholars from Western universities increased the chances of being published in high standard journals* (R5, Lecturer, PhD, 35, Communication, Romania). Another approach on academic networking as a potential competitive advantage regarded the feedback provided by important personalities in the field on the subjects' scientific contributions and the benchmark settled by high quality research – *It is a great opportunity to have my work appraised by the best in my field of interest. Their appreciations and guidance encouraged me to continue my work and settled a frame of reference for papers of exceptional merit* (R13, Professor, PhD, 46, Business, Bulgaria).

As far as online academic networking is concerned, most of the respondents believe that it is more fruitful than offline academic networking. Their arguments rely on the fact that during an academic event it is unlikely to create and develop more than three or four professional ties - *I use to make the most out of international conferences in my field with a view to meet new scholars and practitioners, but as much as I try, it is almost impossible to discuss and share opinion with more than four persons within two or three conference days* (R3, Associate professor, PhD, 36, Telecommunications, Romania). Nonetheless, international academic and scientific events stand for a major prerequisite of further developing relationships online. As most of the respondents posit (regardless of experience or academic rank), initial face to face contacts are transferred to the online social networks, becoming part of the specialized networks like Facebook, LinkedIn, Google+, ResearchGate or Academia.edu. *It would be a real waste to miss the opportunity of maintaining good relationships with your peers from well-ranked universities, especially when they are valuable sources of best practice and reference standard* (R16, Assistant professor, PhD, 40, Economics, Poland). We can thus speak about a form of complementarity between the offline networking process and the online one, with a great advantages for the latter one in terms of time-frame, as it allows for long-term investment in building and maintaining relationships and scientific collaborations.

Even though almost all the respondents have joined academic and scientific online communities, only 13 out of 27 report having an active role within the network. The rest prefer a witnessing position, sometimes totally ignoring the alerts and newsletters from the community. Among the most mentioned reasons for an unresponsive attitude, the lack of time to go through a myriad of new e-mails or updates was the first listed. On the contrary, embracing an active role within the network is determined by the inherent benefits; *I joined ResearchGate a couple of years ago because I was interested in following peers with similar interests and in keeping up to date with events. I am pleased with the type of networking that takes places on ResearchGate, where if researchers have any questions regarding their activity they can receive feedback and answers, therefore improving the quality of their work* (R7, Assistant professor, PhD, 31, Management, Romania).

Regardless of their academic field, most of the respondents reported at least four online communities they were affiliated with. In this respect, specialized LinkedIn groups or web communities privately maintained by certain institutions - ScienceDirect, ResearchGate and Academia.edu - were mentioned by few experienced scholars as tools for informing and results sharing (R1, R9, R20, R26), while most of the young researchers pointed them as valuable

information resources (R11, R18, R21). Among the examples provided, there were references to EURAM, ECREA, UFI, ARS - Association of Romanian Sociologists, RRPP Young Researchers Club Albania, World Coal Association, Euracoal, ILO, IEEE, ITU-T, ITS communications, Research EU, etc. Each academic field brings to the fore specific options in terms of scientific communities, reflecting the research interest and field of expertise that the interviewees are working within.

Almost all the respondents consider that popular online networking sites (SNSs) are proper tools for maintaining academic contacts, collaborating and sharing scientific ideas because they facilitate the knowledge exchange between people from different disciplines, sharing scientific results or resources (R1, Lecturer, PhD, 37, Communication, Romania). SNSs enable users to keep and organize all contacts in one place (R2, Assistant professor, PhD candidate, 25, Communication, Romania), to promote scientific results, to be informed about the work of the others (R3, Associate professor, PhD, 36, Telecommunications, Romania). SNSs facilitate communication between people with similar interests (R11, Assistant professor, PhD candidate, 27, Communication, Romania), offering a cost-effective way to keep in touch with them (R4, Assistant professor, PhD candidate, 40, Communication, Romania)**.** SNSs represent a valuable resource of news about conferences and articles of interest (R10, Assistant professor, PhD, 29, Communication, Romania). There are, hence, multiple benefits associated with SNSs that are related to all the knowledge transfer components, from knowledge search and acquisition, to knowledge exchange and combination.

Listing the recently used web tools for gathering academic / scientific news, debate partners or collaborators, most respondents mentioned Google+ and Facebook specialized groups and pages as first options. The following places were occupied by Academia.edu, ResearchGate and MyNetResearch. Only one respondent reported using Twitter to this end while none of the subjects were interested in specialized blogs or web communities supported by higher education institutions. As mentioned by an assistant professor, we *barely manage to do our teaching and administrative activities. Then we should comply with the research activities. This means that our daily job is time-consuming enough as to cease all the other exploration endeavours*. *The alerts from Google+ and Facebook are more than enough.* Additionally, Academia.edu and ResearchGate are seen "*as wellheads of fresh scientific information which make your life easier if used properly*" (R10, Assistant professor, PhD, 29, Communication, Romania). This recurrent use of the "lack of time" argument comes along with a more or less explicit affirmation of the overall benefits of the online research networks. However, the "lack of time" has two distinct dimensions: one related to the general overcrowded academic schedule (an organizational issue) and the other one to the high informational volume that these online networks provide (a research network-related issue). Both of them reflect a form of rationalization that moves the focus on external factors and speaks less about the individual responsibility in terms of time and knowledge management.

When it comes to the web tools for promoting / sharing the results, ideas and research interests, the subjects expressed a high degree of skepticism towards making their works public. Independent of their experience and position, the respondents are reluctant to use online professional platforms as Academia.edu, ResearchGate and MyNetResearch with a view to promote themselves as researchers. They mainly prefer using Twitter, their Facebook accounts and personal e-mails to inform of their achievements. The arguments range from "*the fear of being criticized for the quality of their contributions*" (R21, Associate professor, PhD, 45, Management, Albania) to "*contract agreements and copyright policy settled by publishing houses or international journals*" (R13, Professor, PhD, 46, Business, Bulgaria). Although there were not traced any differences in terms of the subjects' nationalities or countries of origin, a certain pattern was observed as far as experience and age were concerned. The more experienced the respondents were, the more openness they showed to sharing their publications on professional social networks.

The situation is quite different when discussing the Internet tools used for real time collaboration and communication with other academic people. The great majority of the interviewed subjects mentioned Skype and personal e-mails in the top of their preferences. These are closely followed by Facebook chat, but as most posit "*it mainly depends on the collaborator's affinities and availability*". *We try to adapt as much as possible to our contact's preferences. If we are so lucky as to benefit from the assistance of important scholars form well-reputed universities, we are ready to comply to all his/her requests. The message is far more important than the channel….* (R17, Assistant professor, PhD candidate, 35, Economics and Sustainable Development, Albania). This lays stress on a high level of adaptability in terms of the contexts and practices of interaction, although there is also a more silent dimension related to the directionality of this adaptation. In other words, younger researchers tend to adapt to the preferences of the more experienced ones, while researchers from less known university-centers are usually the ones to adapt to the options provided by those coming from well-reputed universities.

Invited to share a few words about their opinion regarding the benefits and/or the limits of online networking in the academic world, the respondents argue that it has a lot of potential in terms of the availability and diversity of the online social networks. The main advantages they mentioned were consistent with their previous answers, ranging from having access to the latest information in the field – *international conferences abroad, call for papers alerts, recent publications, academic networking*, to *sharing knowledge, research advances and innovative findings which are the key to the system development* (R9, Associate professor, PhD, 49, Economics, Romania). Almost all the participants in the study acknowledged the importance of exploring the knowledge potential of online social networks, especially by the universities from the developing countries. The main argument is that the knowledge advancement in these higher education centers – deprived of the adequate research infrastructure – highly relies on capitalizing the elite's scientific studies and findings.

As far as the possible shortcomings are concerned, the emphasis is laid on overestimating online networking against the injury of personal / direct interaction. *I do believe that strong academic relationships emerge when discussing and debating face to face within a conference session or seminar, when openly sharing mutual interests and the passion for the same topic or field* (R7, Assistant professor, PhD, 31, Management, Romania), *I deem that online networking is deprived of the inherent substance involved by offline networking. It lacks the interpersonal similarity which makes people like and enjoy each other and catalyzes a solid bond among researchers* (R10, Assistant professor, PhD, 29, Communication, Romania).

Moreover, the mediated access to certain materials that involves turning from a more passive person-to-document relation to a more active person-to-person communication for receiving the access to the full papers is perceived as a constrain in this knowledge transfer process:*There are many constraints when trying to read certain articles, especially the ones published in ISI journals. You always have to request the author's permission, who is most likely part of the scientific elite. Very often, permissions fail to be granted…* (R1, Lecturer, PhD, 37, Communication, Romania).

5. Conclusions and research limits

The exploratory investigation of the network-based intellectual capital as a competitive advantage within European universities from developing countries was focused on three main dimensions: the network-based human capital, the network-based structural capital and the network-based relational capital. Each dimension was approached as a distinctive measure of the study and operationalized through multiple items. Due to its exploratory nature, the research aimed at closely examining the subjects' opinions, attitudes and behaviors towards the capitalization of the intellectual capital embodied by online social networks.

The exploration of the first component – the network-based human capital – highlighted that subjects perceive well-reputed scholars in the field as key-knowledge nodes within their professional / academic networks. In this respect, they show a consistent interest in following their research and publications as a way to achieve scientific self-improvement, thus providing them with a referential status in terms of good practices. The interviewed professors acknowledge the importance of learning from the best and of international knowledge transfer. However, these are merely weak ties, defined by low relational distance and frequency of interaction, thus with a higher competitive advantage for the less experienced researchers, who benefit from receiving a cost-efficient access to relevant information. These weak ties are valuable in providing new, non-redundant information, facilitating both the search and the transfer of useful knowledge (Granovetter, 1973; Hansen, 1999; Levin and Cross, 2004; Filieri and Alguezaui, 2014).

The second component - the network-based structural capital – revealed that a myriad of channels are used for accessing information on academic news, events, publication opportunities, research projects of scientists from a certain area of interest. These resources range from the generic online social networks like Facebook, Google+ and Twitter to online professional networks as LinkedIn and further to online academic networks like Academia.edu, ResearchGate and MyNetResearch. As respondents reported, there was a clear tendency of using generic online social networks for scientific self-promotion (new publications and academic achievements) and, conversely, a general tendency of gathering relevant information on new publications, research projects, conferences and other latest news in the field from online academic and specialized social networks (regarded as complex inventories of useful documents and databases). Nevertheless, it seems that we are witnessing an emergent stage in terms of online research networks being leveraged on within the wider framework of knowledge management. Researchers are, thus, actively involved in exploring and getting familiar with this new landscape of online networks, testing and, at the same time, contributing to a dynamic process of defining their potential for the research and academic activity.

The investigation of the network-based structural capital brought about a specific pattern, namely the lack of institutional policies and strategies for capitalizing the online knowledge resources. In other words, although a prominent goal, the capitalization of the knowledge sharing within the network is not supported in a formal manner by higher education centres from developing countries, leaving all the responsibility to the individual. Little resources are allocated by universities with a view to exploit the structural capital of academic or professional networks.

The last component – the network-based relational capital – is generally valued and acknowledged as a source of competitive advantage by almost all the respondents. The Internet / web tools are found to be effective for keeping in touch with other researchers in the field and the exploitation of online academic networking and knowledge sharing via online professional social networks is considered a paramount factor of self-improvement and of organizational development. Still, although positive opinions and attitudes are reported at this level, there is a consistent cleavage between the approaches and the actual behaviours. The affiliation with certain online networks is often half-completed as many respondents assume an unresponsive or witnessing position, due to the lack of time resources or to the overlapping tasks. Therefore, they do not contribute to the network or system advancement and they do not entirely capitalize its knowledge resources. Consequently, they do not act as knowledge sources and promoters within their universities, being unable to make the most out of the network-based human, structural and relational capitals.

Moreover, the witnessing position, which is even more prominent among the younger researchers, can be correlated with their rankings in terms of reasons and benefits for joining these networks, which were firstly related to getting access to relevant information and, secondly, related to building relationships and developing scientific collaborations. This can be seen as a rather self-centred approach, focused on the knowledge access and acquisition part, and less on sharing, exchanging and combining knowledge.

On the one hand, such heterogeneous networks in terms of the knowledge owned are more beneficial for developing new ideas in case of peripheral and semi-isolated members or groups (i.e. young researchers, researchers from less known university centres) (Fang et al., 2012). On the other hand, this passive unidirectional participation (i.e. receiving access to shared knowledge or resources), which is merely person-to-document oriented, brings an unbalanced situation in terms of knowledge gains for young and well-known researchers, in favour of the former. Thus, when it comes to knowledge access and acquisition, it seems that the competitive advantage of these online networks is higher for the young researchers. However, it should be noticed that this approach allows mainly for significant gains in terms of explicit knowledge (i.e. "Know-what") and less for tacit knowledge (i.e. “Know-how"), which actually has a higher strategic value (Pérez-Luño et al., 2011).

At this point, several limits of the study are to be brought to the fore. First, the study relies on an exploratory research meant to investigate the approaches of a small number of subjects. Second, as a consequence of the previous limitation, the findings are not statistically representative for all the academic population in the European universities from developing countries. As mentioned before, the main aim of the study is to foster a theoretical and empirical framework for further developments of the issue. Third, it is difficult to make comparisons with other similar research as, to the best of our knowledge, the issue of the network-based intellectual capital has not been previously studied as such. This aspect adds to the value of the present paper as a possible frame of reference for knowledge capitalization and organizational development of the European universities from developing countries.

References

Adler, P.S., Heckscher, C. and Prusak, L. (2011) ‘Building a collaborative enterprise’, *Harvard Business Review,* vol. 89, no. 7/8, pp. 94-101.

Ammann, E. (2010) ‘A Hierarchical Modelling Approach to Intellectual Capital Development, *The Electronic Journal of Knowledge Management,* vol. 8, no. 2, pp. 181-191.

Andriessen, D (2004) *Making Sense of Intellectual Capital. Designing a Method for Valuation of Intangibles*, Amsterdam: Elsevier.

Assi Ahmed Al-Dujali, M. (2012) ‘Influence of Intellectual capital in organization Innovation’, *International Journal of Innovation Management and Technology*, vol.3, no.2, pp.128-135.

Bohlander, G. and Snell, S. (2007) *Managing human resources*, Mason, Ohio: Thomson-Southwestern.

Bogner, W. and Bansal, P. (2007) ‘Knowledge Management as the Basis of Sustained High Performance’, *Journal of Management Studies*, vol. 44, no. 1, pp. 165-188.

Bontis, N. (1998) ‘Intellectual capital: an explanatory study that develops measures and models’, *Management Decision*, vol. 36, no. 2, pp. 63-76.

Brătianu, C. (2007) 'Thinking patterns and knowledge dynamics', *Proceedings of the 8th European Conference on Knowledge Management*, Academic Publishing International, Reading, UK, 6-7 September, pp. 152-157.
Brătianu, C. (2013) 'The Triple Helix of the Organizational Knowledge', *Management Dynamics in the Knowledge Economy*, vol. 1, no. 2, pp. 207-220.
Brătianu, C and Orzea, I. (2013) 'Unfolding the Gordian Knot of the University Intellectual Capital', *The Electronic Journal of Knowledge Management*, vol. 11, no. 3, pp. 214-225.
Cardoso, L., Meireles, A. and Peralta, C.F. (2012) 'Knowledge management and its critical factors in social economy organizations', *Journal of Knowledge Management*, vol. 16, no. 2, pp. 267-284.
Carley, K.M. (2002) 'Smart Agents and Organizations of the Future', in Lievrouw, L. and Livingstone, S. (ed.) *The Handbook of New Media*, Thousand Oaks, CA: Sage, pp. 206-220.
Davenport, T.H. and Prusak, L. (2000) *Working Knowledge. How Organisations Manage what They Know*, Boston, MA: Harvard Business School Press.
Dean, A. and Kretschmer, M. (2007) 'Can ideas be capital? Factors of production in the postindustrial economy: A review and critique', *Academy of Management Review*, vol. 32, no. 2, pp. 573-594.
De Biazzi, F. (2013) 'Intellectual Capital and Organizational Renewal: Building Dynamic Capabilities through People', *Brazilian Administration Review*, Special Issue, vol. 9, art. 3, pp. 38-59.
Edvinsson, L. (2002) *Corporate Longitude. What You Need to Know to Navigate the Knowledge Economy*, London: Prentice-Hall.
Fang, C., Lee, J. and Schilling, M.A. (2012) 'Balancing exploration and exploitation through structural design: the isolation of subgroups and organization learning', *Organization Science*, vol. 21 no. 3, pp. 625-642.
Filieri, R. and Alguezaui, S. (2014) 'Structural social capital and innovation. Is knowledge transfer the missing link?', *Journal of Knowledge Management*, vol. 18, no. 4, pp. 728-757.
Gorgani, T., Nazem, F., Sharifi, H.P. and Karimzade, S. (2014) 'Investigating the Multivariate relation of the Intellectual capital, Organizational intelligence and Organizational innovation at the Islamic Azad University, district of 3 in province of Mazandaran', *Management Research Report*, vol. 2, no. 4, pp. 501-510.
Granovetter, M. (1973) 'The strength of weak ties', *American Journal of Sociology*, vol. 78, no. 6, pp. 1360-1380.
Grimaldi, M. and Hanandi, M. (2013) 'Evaluating the Intellectual Capital of Technology Transfer and Learning Public Services', *International Journal of Engineering Business Management*, vol. 5, no. 7, DOI: 10.5772/56002.
Hansen, M.T. (1999) 'The search-transfer problem: the role of weak ties in sharing knowledge across organizational subunits', *Administrative Science Quarterly*, vol. 44, no. 1, pp. 82-111.
Halawi, L., Aronson, J. and McCarthy, R. (2005) 'Resource-Based View of Knowledge Management for Competitive Advantage', *The Electronic Journal of Knowledge Management*, vol. 3, no. 2, pp. 75-86.
Harreld, J.B., O'Reilly, C.A. III and Tushman M.L. (2007) 'Dynamic capabilities at IBM: driving strategy into action', *California Management Review*, vol. 49, no. 4, pp. 21-43.
Hislop, D. (2009) *Knowledge Management in Organizations*, 2nd ed., New York: Oxford University Press.
Holden, N. and Glisby, M. (2010) *Creating Knowledge Advantage. The Tacit Dimension of International Competition and Cooperation*, Copenhagen: Copenhagen Business School Press.
Hormiga, E., Batista, R. and Sánchez, A. (2011) 'The role of intellectual capital in the success of new ventures', *International Entrepreneurship Management Journal*, vol. 7, no. 1, pp. 71-92.
Johnson, G., Whittington, R. and Scholes, K. (2011) *Exploring Strategy. Text & Cases*, London: Prentice-Hall.
Kok, A. (2007) 'Intellectual Capital Management as Part of Knowledge Management Initiatives at Institutions of Higher Learning', *The Electronic Journal of Knowledge Management*, vol. 5, no. 2, pp 181-192.
International Monetary Fund (2014) *World Economic Outlook*, [Online], Available: http://www.imf.org/external/pubs/ft/weo/2014/01/pdf/text.pdf [2 May 2015].
Levin, D.Z. and Cross, R. (2004) 'The strength of weak ties you can trust: the mediating role of trust in effective knowledge transfer", *Management Science*, vol. 50, no. 11, pp. 1477-1490.
Malone, T.W. (2004) *The future of work: how the new order of business will shape your organization, your management style, and your life*, Boston: Harvard Business School Press.
Martín de Castro, G., López, P. and Navas, E. (2004) 'The role of corporate reputation in developing relational capital', *Journal of Intellectual Capital*, vol. 5, no. 4, pp. 575-585.
Martínez García de Leaniz, P. and Rodríguez del Bosque, I. (2013) 'Intellectual capital and relational capital: The role of sustainability in developing corporate reputation', Intangible Capital, vol. 9, no. 1, pp. 262-280.
Nonaka, I. and Takeuchi, H. (1995) *The Knowledge Creating Company. How Japanese Companies Create the Dynamics of Innovation*, New York: Oxford University Press.
Nonaka, I., Toyama, R. and Hirata, T. (2008) *Managing flow. A process theory of the knowledge-based firm,* New York: Palgrave Macmillan.
Nowicka, M., Dima, I.C. and Ștefan, C. (2012) 'Integrating The IC Concept Into Strategies For The Development Of Regional Network Systems', *European Journal of Business and Social Sciences*, vol. 1, no. 6, pp. 21–33.
Ordóñez de Pablos, P. (2013) *Measuring And Reporting Knowledge-Based Resources: The Intellectual Capital Report*, [Online], Facultad de Ciencias Economicas, University of Oviedo, Available: http://www.google.ro/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCMQFjAA&url=http%3A%2F%2Fwww2.warwick.ac.uk%2Ffac%2Fsoc%2Fwbs%2Fconf%2Folkc%2Farchive%2Foklc3%2Fid392.pdf&ei=yuY3VMvpLMjnywPGjoFg&usg=AFQjCNHHsirIvWlux8kIGlOiGX8V2qYCjw&bvm=bv.77161500,d.bGQ [20 March 2015].

Pérez-Luño, A., Cabello Medina, C., Carmona Lavado, A. and Cuevas Rodríguez, G. (2011) 'How social capital and knowledge affect innovation', *Journal of Business Research*, vol. 64, no. 12, pp. 1369-1376.

Pogarcic, I., Krnjak, D. and Ozanic, D. (2012) 'Business Benefits from the Virtualization of an ICT Infrastructure', *International Journal of Engineering Business Management*, vol. 4, no. 42, pp. 111-119.

Ramírez, Y., Lorduy, C. and Rojas, J.A. (2007) 'Intellectual capital management in Spanish Universities', *Journal of Intellectual Capital*, vol. 8, no. 4, pp. 732-748.

Ramírez Córcoles, Y., Santos Peñalver, J.F., and Tejada Ponce, A. (2011) 'Intellectual capital in Spanish public universities: stakeholders' information needs', *Journal of Intellectual Capital*, vol. 12, no. 3, pp. 356-376.

Roos, G., Pike, S. and Fernstrom, L. (2005) *Managing Intellectual Capital in Practice*, Amsterdam: Elsevier.

Sánchez, P., Elena, S. and Castrillo, R. (2006) 'The Intellectual Capital Report of Universities. Guidelines for disclosing IC information', in Observatory of the European University (ed.) *PRIME-OEU Methodological Guide*, pp. 223-251.

Seidman, I. (1998) *Interviewing as qualitative research: A guide for researchers in education and the social sciences*, New York: Teachers College Press.

Senge, P. (1999) *The Fifth Discipline. The Art & Practice of the Learning Organisation*, London: Random House Business Books.

Sequeira, C.A, Will, M., Fernández y Fernandez, E., Mertins, K. (2013) 'How to Innovate Management through Intellectual Capital Statements - Lessons Learned from the First Implementations in Bra zil', *The Electronic Journal of Knowledge Management,* vol. 11, no. 3, pp. 256-267.

Skandia (1996) *Supplement to the annual report. Customer value*, Stockholm, Sweden.

Soto-Acosta, P., Colomo-Palacios, R. and Popa, S. (2014) 'Web knowledge sharing and its effect on innovation: an empirical investigation in SMEs', *Knowledge Management Research & Practice*, vol. 12, no. 1, pp. 103–113. doi:10.1057/kmrp.2013.31.

Sumedrea, S. (2013) 'Intellectual Capital and Firm Performance: A Dynamic Relationship in Crisis Time', *Procedia Economics and Finance*, vol. 6, pp. 137–144. doi:10.1016/S2212-5671(13)00125-1.

Szulanski, G. (1996) 'Exploring internal stickiness: impediments to the transfer of best practice within the firm', *Strategic Management Journal*, vol. 17, Winter Special Issue, pp. 27-43.

Welch, J. (2005) *Winning*, New York: Harper Collins Publishers.

Westaby, J.D. (2012) *Dynamic network theory: How social networks influence goal pursuit*, Washington, DC: American Psychological Association.