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PAPER

Transnational Collective Agreements and Global Collective Treaties in Russia and the EU

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Abstract In connection with the processes of globalization and internationalization of the economies of States in different regions of the world, the increasing pressure of competition, there are new forms of social partnership agreements at the regional levels (so called transnational collective agreements) and global collective agreements. Regional associations of employers and trade unions, transnational corporations and trade unions participate and play an important role in this process.

The paper examines collision issues related to the solution of the problem of correlation of transnational collective agreements and global collective agreements with other international and national sources of labour law.

This issue is almost not settled both in the national labour legislation of the member states of the European Union and the Eurasian Economic Union, and at the international level. The author examines specific examples of transnational collective agreements and global collective agreements from the legal system of the European Union, as well as the member states of the Eurasian Economic Union, in particular the Russian Federation.

The conceptual solutions to the above mentioned problem of resolving legal conflicts between transnational collective agreements and global collective agreements and national social partnership agreements in the member states of the Eurasian Economic Union were proposed.

Keywords: Transnational (framework); collective agreement; global collective agreement; source of law; conflict.

JEL classification: F; H; L

Introduction

Taking into account the processes of globalization and internationalization of the economies of states in different regions of the world, the growing pressure of

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competition on goods, services, finances, labour, new forms of social partnership agreements at regional levels - transnational collective agreements and global collective agreements have appeared. Their conclusion is attended by regional associations of employers and trade unions, transnational corporations and trade unions that unite the workers of these corporations.

Although the questions of collective-contractual legal regulation with the use of collective agreements of transnational corporations (hereinafter - TNCs) and international framework agreements have been studied in some part by Russian scientists (K.N. Gusov and K.D. Krylov [1], N.L. Lyutov [2], L.V Zaitseva [3], S.V. Shuraleva [4]) and Western European researchers (E. Alles, C. Sciarra, F. Valdés Dal-Ré [5], R.Blanpain [6], B. Happle [7], G. Boni, I. Schцmann, and others [8]) the legal nature of these sources of labour law, Globalization of regionalization and legal systems, is not clear, as well as the question of their relation to other classical sources of international and national labour law.

The science of labour law (both Western and post-Soviet) did not completely investigate conflict issues related to possible differences between the provisions of transnational collective agreements and global collective agreements with national social partnership agreements (collective agreements, tariff agreements, national agreements).

For a comparative legal study, legal sources, transnational collective agreements and global collective agreements concluded in the legal systems of the member states of the European Union (hereinafter referred to as the EU) and the Eurasian Economic Union (hereinafter referred to as the "EEU"), in particular TNCs registered in the Russian Federation . This article is a continuation of the previous two monographic studies of sources of labour law in Belarus and the member states of the EEU [9; 10].

1. International labour standards for MNCs (TNCs)

Let us recall that the Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy (for brevity - The MNC Declaration adopted by the ILO Governing Body in 1977 and updated in 2000 and 2006 [11] briefly touched upon the participation of MNCs in social partnership (collective) relations.

The purpose of the MNC Declaration is to encourage the positive contribution that MNCs can make to economic and social progress and minimize and overcome the difficulties that can be caused by their different activities, taking into account the resolutions of the United Nations (UN), aimed at the new international economic order establishing, as well as subsequent achievements within the UN, such as, for example, the Global Compact and the Millennium Development Goals.

Although the MNCs Declaration did not set out to define MNCs accurately, but in paragraph 6, to facilitate understanding of the term, it indicated that multinational corporations include such corporations - state, mixed or private - owned or controlled outside their home country there are production, distribution, maintenance and other areas. As we can see, such a broad interpretation of the MNC makes it possible to use this category as a generic one, embracing a narrower concept - transnational corporations,

which include subsidiaries or affiliated companies with the rights of legal entities and based outside the state where the parent company is registered.

Paragraphs 42-56 of the MNC Declaration are particularly important for clarifying international standards relating to freedom of association and the right to collective bargaining, and they largely repeat and specify the international labour standards that were previously enshrined in ILO Conventions No. 87, No. 98, No. 135 and in a number of ILO recommendations. Unfortunately, none of the paragraphs of the above-mentioned MNC Declaration even mention transnational landmark agreements and global collective agreements, as well as options for resolving the problem of their correlation with other social-partnership agreements and international treaties.

2. Legislative "vacuum" and legal nature of transnational collective agreements and global collective agreements

Before legalizing global collective agreements and transnational collective agreements in legislation, it is necessary to understand what they are, what is their legal nature and, to find out: are they a kind of social partnership normative agreement or an international treaty?

An attempt to look at the legal nature of global collective agreements concluded with the participation of TNCs was undertaken in a collective work with the participation of K.N. Gusova, K.D. Krylov, in the Ph.D. theses of Perm researchers M.V. Shakhaev and S.V. Shuraleva, in the scientific articles of L.V. Zaitseva and D.A. Novikov. But all points on the "i" in this matter are not placed either in the theoretical, or even more so in the legislative and law enforcement aspects.

The supranational level of international framework agreements concluded with the participation of TNCs was not without justification, co-authors of the joint monograph edited by K.D. Krylov, published in 2005 [1, p. 243], but this research was rather staged. The co-authors of this book did not offer an acceptable solution to the problem of embedding these international (more precisely - transnational) framework agreements and corporate agreements in the legal system of Russia.

M.V. Shakhaev, defining the collective agreement as a legal act regulating labour and other directly related relations, relations on social protection, as well as economic relations related to labour, concluded as a result of collective negotiations between the collective of workers, representatives of the collective of workers, on the one hand, and employers and employers' associations, on the other hand, with the participation of public authorities (local government), at the appropriate level of social parthnership relations [12, p.5] in his dissertation yet clearly does not have a place of global collective agreements and international framework agreements in relation to this system.

In opinion of S.V. Shuraleva "corporate agreements are not a subclass of collective agreements, which are implicit in Article 45 of the LC RF, but are an independent class of agreements in the field of social partnership, because the corporate agreement equally combines the signs of a collective agreement and a collective agreement" [4, p.165-166]. It is true that the same author writes that corporate agreements can be considered as an "independent subclass of social partnership agreements", arguing that

"it represents a new section of social partnership" [4, p.169]. Following the logic of this author, it turns out that all social-partnership agreements are divided into three large subclasses: collective agreements, corporate agreements and collective agreements. In our opinion, such a tripartite system does not exhaust the whole variety of social partnership agreements and at least should be supplemented by transnational collective (framework) agreements.

The Russian scientist L.V. Zaytseva, analyzing the Labour Code of the Russian Federation (hereinafter - the Labour Code of the Russian Federation) and other Russian labour legislation, concludes that neither Article 45 nor Article 26 of the Labour Code establishing levels of social partnership in the Russian Federation provides for the existence of any agreements at the level of holdings, or the corresponding level of social partnership "and then makes a valid conclusion that" today in Russia the collective agreement of a corporation (holding) exists in a situation of some kind of legal uncertainty, going beyond the schemes defined by the legislation. "[3, p.172]. One can partly agree with this statement, but with regard to Russia the situation is in any case not hopeless, considering that the list of agreements in Article 45 of the LC RF is formulated as open and there are mentioned other agreements that, according to part 10 of this article, "may involve the parties at any level of social partnership in certain areas of regulation of social and labour relations and other directly related relationships." A similar rule is also fixed in Part 9 of Article 46 of the Labour Code of the Kyrgyz Republic in 2004 (hereinafter – the LC of the Kyrgyz Republic). The problem, therefore, is the lack of legitimization in the LC RF and in the LC of Kyrgyzstan of an international or, more accurately, transnational level of social partnership, and ideally a reference to a general or global collective agreement and a transnational framework agreement.

For comparison: unlike Russian and Kyrgyz legislation, the Labour Code of the Republic of Kazakhstan of 2015 (in Article 152) and the Labour Code of the Republic of Belarus of 1999 (Article 358) provide for the conclusion of agreements only at three levels (republican, sectoral and regional/local), with three types of relevant agreements formulated in Belarus and Kazakhstan in an exhaustive manner, which does not allow the integration of legally operating systems of social partnership into global collective agreements and transnational frameworks agreements. In the Labour Code of the Republic of Armenia (art. 46), the list of levels on which collective agreements can be concluded is also exhaustively defined (there are no agreements in Armenia with the legislator at all). More details of the collective agreements concluded in EEU member states, agreements are given in the last of our monograph [10, p. 258].

The Ukrainian author D.A. Novikov notes that instead of the codes of social behaviour as unilateral acts of "goodwill", "in the mid-1990s, international trade unions developed their own code" Basic Code of Conduct covering the world of work", the ultimate goal of which was "introduction to practice the work of international trade unions for the conclusion of international collective agreements"[12, p.377]. The same scholar calls for the legitimization of international collective agreements that "will stop the spread of unsustainable employment and will help to strengthen the social protection of workers, increase their living standards, preserve the balance of interests of workers,

employers and the state at the global level" [12, p.378] .

Of all the above points of view, the closest thing to understanding the legal nature of corporate agreements was approached by S.V. Shuraleva. In our opinion, these sources of law regulating certain aspects of labour and related relations undoubtedly go beyond the national level of legal regulation, as they regulate relations outside the state of registration of TNCs, extending to subsidiaries abroad and their employees. They cannot be fully attributed to the sources of international labour law (in this regard, they are not entirely called the international framework agreements), since the main subjects of international law (states and international organizations) are not involved in their adoption, therefore their place is in the supranational labour law. If we rely on the term "transnational law", introduced by Philip Jessup in his 1956 monograph of the same name, as a broader concept, "all the law that governs actions and events that go beyond national boundaries" [15, p.2], transnational collective agreements and global collective agreements are sources of transnational law.

At the same time, global and general agreements in their legal nature are socially-partner normative agreements, but with a broader scope than collective agreements and agreements concluded in the national legal order.

3. Experience in concluding transnational collective agreements and global collective agreements in the EU and the EEA

Historically, one of the first attempts to conclude corporate agreements in the European region can be considered an agreement between the unions and the management of TNC Glaverbel-Glass-Company-BSN-Gervais-Danone, which covered workers in France, Austria, Italy and the Federal Republic of Germany in 1977. The first supranational agreement regulating labour relations, is associated with 1985 - between the company Danone and the International Federation of Trade Unions of Food and Allied Industries (IFTUFAI). Later, at the annual meetings of social partners from 1989 to 1997, in its development was adopted a number of agreements, including. 1994 - on the basic trade union rights [1, p.250].

In 2013, an agreement was signed between the global IndustiALL union and Volvo Group to establish a world-wide production council that promotes the practice of the European production council to representatives of employees who work in enterprises located outside the EU [16, p. 315].

As of April 2018, the global union association IndustriALL signed transnational collective agreements with 44 transnational companies: Aker, BMW, Bosch, Daimler, Elecrilux, Ford, H & M, Lukoil, Mann, Peugeot, Citroen, Renault, Saab, Siemens, Tchibo, Volkswagen and others.

In the EU, the joint effort of the ILO and the European Commission has even formed a separate database of transnational agreements, which includes 265 international, European and transnational agreements concluded with the participation of TNCs, in which global treaties and transnational collective agreements (with different names) are placed, for example, Air-France-KLM (France), Allianz (Germany), AHA groups

(France), Weier, BMW, Bosch (Germany), etc. [14] With reference to the experience of the conclusion of global collective agreements, which some authors refer to as corporate agreements in the field of social and labour relations [1; 4], others - acts of social partnership of TNCs [3, p. 171], the most interesting is the experience of such well-known oil producing and gas producing TNC – residents of Russia – as JSC GAZPROM and JSC NK LUKOIL, which are widely represented in Europe by their subsidiaries.

As applied to JSC GAZPROM, registered in Russia, its subsidiaries operating in the territories, for example, Belarus, Kazakhstan or Kyrgyzstan, will be subject to the General Collective Agreement of JSC GAZPROM and its subsidiaries for 2013-2015, the action which was extended for 2016 – 2018, but at the same time the applicable labour legislation will be the legislation of Belarus, Kazakhstan and Kyrgyzstan respectively, if it concerns workers employed in these republics. It remains an open question how this general collective agreement will be correlated with the general agreements concluded in these republics with the participation of the government, republican associations of trade unions and employers (employers), as well as industry (tariff) agreements concluded by oil refineries and concerns? We will return to this issue later. The specificity of the scope of global and general collective agreements (for example, the General Collective Agreement of JSC GAZPROM and its subsidiaries for 2013 – 2015) is that they operate in subsidiaries, branches and representative offices of the parent company, often alongside with collective agreements concluded in these organizations and their separate subdivisions. In essence, they act as the normative one, based on which the collective agreements of the subsidiaries of this TNC are developed.

If we refer to the Agreement concluded between the global trade union association IndustriALL, the trade union of oil, gas and construction workers of the Russian Federation, the international association of trade union organizations of JSC NK LUKOIL and JSC NK LUKOIL itself, we can see that this agreement is being extended to all spheres of activity and organizations directly controlled by LUKOIL [18].

The solution of the question of the correlation of the above mentioned agreements with each other and with other sources of labour law lies in the plane of the answer to the question of their attribution to a particular subsystem of sources of labour law (to international, supranational or national sources). It is pertinent to recall that Article 8 of the Model Law of the CIS “On Social Partnership” of 16.11.2006 [19] mentions such level of social partnership as the level of the financial and industrial group and transnational corporation. We believe that this name of this level of social partnership with regard to transnational agreements should be adjusted and shortened. The supranational (transnational) level of the conclusion of these social partnership agreements, their distribution to workers and organizations located on the territory of different states, allows, with a certain degree of conventionality, to classify these normative agreements to the subsystem of supranational sources of labour law. Since global collective agreements and framework international social-partnership agreements *de jure* are not international treaties, and therefore it is not correct to call them international agreements in the field of social partnership [20, p.20], but their scope is broader than national social-partnership agreements. Given the general legal nature, conflicts arising between

transnational collective agreements, global collective agreements and national social partnership agreements (including general, sector (tariff) and regional, local, territorial agreements, should be resolved on the basis of the universal conflict principle *in favorem* improvement of the legal status of employees), since neither in the member states of the EEU nor in the EU law the issue of their legal power is not legislatively regulated L.V. Zaitseva came to a similar conclusion in her report at the Third Gusovsky Readings in 2017, which believes that the actual expansion of the practice of using global collective agreements (agreements) "can be facilitated by the effective and universal implementation of the principle of" lawfully , which improves the position of the employee "[21, p.267] .This principle is more preferable at the universal level (in the ILO convention or declaration), taking into account the supranational level of transnational collective agreements and global co Collective agreements with access to the borders not only of specific states and regional interstate associations.

Conclusion

Summarizing the results of the scientific comparative legal research, we note the following:

- transnational collective (framework) agreements, as well as global (general) collective agreements concluded with the participation of TNCs, represent the legal nature of a variety of social partnership normative agreements concluded at the transnational level of social partnership;
- in terms of the level of imprisonment and scope, transnational collective agreements can be attributed to sources of supranational labour law that have a cross-border scope, extending to employers - legal entities and employees from different countries;
- meaningful conflicts that can arise between transnational collective agreements and global collective agreements with national social-partnership agreements should be resolved on the basis of the conflict of laws *in favorem*;
- the labour legislation of the EEU member states requires legalizing the existence of such types of social partnership normative agreements as transnational collective agreements and global collective agreements, as well as the transnational level of social partnership, supplementing the corresponding norms of the heads of labour codes devoted to social partnership.

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PAPER

Indian IT service industry as a socio-technical transition: A multi-level perspective analysis with case studies

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Abstract Indian IT-services companies did experience 10 times growth from the mid-1990s till 2005. Companies did achieve growth predominantly with an approach based on aggregation and arbitrage; however, from 2005 to 2015 the growth was different. Going forward, it is imperative to look beyond arbitrage and aggregation, one approach is an emphasis on organizational adaptations to manage in transitions. Transition literature has numerous instances explaining shifting of assemblies of socio-technical systems with a heuristic and analytic view. To assist practitioners, the author extends it for IT-services with a case study from an Indian IT-services company. The current practices of arbitrage and aggregation approaches provide only incremental innovations and are insufficient; the need is in developing adaptation-selection.This requires using latest ICT-innovations and develop organizational capabilities that promote knowledge management and foster collaboration both at intra- and inter-organizational levels. The capabilities that promote knowledge management and collaboration assist in developing an innovative culture within the organization, thereby, enable other entities in the environment to coevolve.

Keywords: IT-services; software development; software methodology; socio-technical systems; innovation.

JEL Classification: M15; O31; O33

1. Introduction

Indian Information and Communication Technologies (ICT) companies, since the early 1990s, focused extensively on Information Technology (IT) services. IT services include software development, deployment, maintenance, and support. Indian IT companies served both business and government sectors. Business sector involved both IT and non-IT organizations. Non-IT organizations represented sectors such as manufacturing, retail, finance, financial services, healthcare and services, telecommunications and so forth while IT organizations focused exclusively on software product development. IT organizations are Microsoft, Oracle, SAP and CA ~~Technologies to name a~~ few. With the advancement of client-server technologies in the

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mid-90s and subsequent development of web technologies paved way for IT enablement of their activities. This presented large opportunities for various IT services and several Indian companies competed with one another. IT companies followed a business model comprised predominantly of onsite-offshore model based on aggregation and arbitrage. Offshore refers to services done from India and onsite refers to services from customer locations outside India, predominantly North America, Europe, and the Far East. Indian IT companies expanded their global development approach with aggregation approach by opening offices in other parts of the world such as Latin America, erstwhile eastern bloc countries, the term 'near-shore' came into existence. In the mid-90s and until mid-2000, to meet the increasing demand for IT services Indian companies every year visited university campuses and made employment offers to several students who meet their criteria. To make the atmosphere more conducive, both Central and state governments offered tax waivers to IT companies apart from permissions to start new institutes. IT companies' business model of frequent overseas assignments with some having more than six months' duration encouraged students of non-IT discipline to make a career shift to IT services. The cost parity of IT services companies and reduced resource ramp-up timelines prompted several customer organizations of Indian IT services companies to benefit from labor arbitrage.

A major component of the project cost for IT services companies is resources (labor) cost. The production and transaction costs did influence organizations to opt for IT outsourcing even though financial slack is not a significant reason (Ang & Straub, 1998). To meet the demand, IT services companies focused extensively on their operations, both resource ramp up and IT deliverables. The changes to their operations resulted in several organizations getting the highest levels of the Software Engineering Institute (SEI) Capability Maturity Model (CMMi) and ISO certifications 9001 and 14001. Organizations also used lean principles to improve operations (Staats et al., 2011). The certifications were unique selling propositions for several IT companies. Though these certifications bring improvements to their software engineering practices, competitors can replicate these practices (Winter & Szulanski, 2001).

With ever-increasing demand and margins that IT companies expect, they were focusing on improving metrics related to resources and IT deliverables. The companies aimed to outsmart their competitors on these metrics and identified improvements. Companies that had a history of performing turnkey projects excelled in fixed price projects while companies that focused on activities related to post-deployment of software and products nearing the end of life (in IT services parlance maintenance and services projects) excelled in time-and-material projects.

The ever-increasing demand prompted companies to increase their employees. In their business model, revenue is being directly proportional to the number of employees, therefore, increasing employees displayed growth. To increase their brand image several IT services companies did go public and presented their results every quarter, apart from an annual report. In their results, companies apart from revenue, shared new customers added, customers above the US $ 10 MN revenue, and competed on operating margins.

Operating margin accounts for both revenue and operational efficiency. To leverage cost arbitrage companies continued to recruit fresh candidates from universities; their <3 years experienced employees stands at 40-45% of their total employees. The companies did face challenges and were on increasing wages, competition from IT companies in other countries due to their lesser operational cost (wages) and improving project profitability. To take further advantage of the cost arbitrage, reduced employee onboarding time and re-skilling time by recruiting resources from the market or retrenchment of their employees. Apart from cost, it is essential to emphasize the quality, flexibility, and scalability of the developed product (Mital et al., 2015). An approach focussed on operational efficiency did result in less focus on innovation towards improving product quality. In the subsequent parts of this section, the author discusses diffusion of innovation in organizations and societies which is essential to develop quality products. IT Services with a large ICT component; invariably experience organizational and group dynamics, interactions between and among groups with culture, attitude, and values of individuals, groups, and organizations influencing technology diffusion. Therefore, IT services are socio-technical systems. In the socio-technical system, the characteristics of constituent sub-systems define the overall system characteristic. When sub-systems undergo changes, it results in changes to its constituent elements and its associations with other sub-systems, with changes to the interconnection of elements (Geels, 2002).

These set of actions, though temporal, manifest in different forms and influence the observable characteristics of the actors and the systems. Observable characteristics could be cognitive learning, knowledge creation, belief, insight, social efficiency, sharing of knowledge between and within generations i.e. dissemination of novelty, economic prosperity, group specializations and so forth. Broadly, socio-technical changes happen at two planes. One plane is at the elements, both social and technical, and their linkages based on certain rules develop engineering practices, products, skills, knowledge creation and sharing and embedded in institutions and infrastructure. The interlinkage of elements creates variations, from the variations 'selection' occurs and retention of these selections occur for economic growth. The other plane is with external factors that enable and/or constrain elements and by cultural learning, human cognition, and new knowledge creation and dissemination within and between generations. The first change (or transition) follows neo-Schumpeterian and the second naturalistic approach (Witt, 2008). Society follows a naturalistic approach and has an endogenous characteristic of novelty, emergence, and dissemination. The two approaches initiate change with different ontological stance and heuristic strategies (Witt, 2008). Therefore, to meet demanding customer wants-and-needs, it is imperative for IT services companies to focus beyond operational effectiveness and explore avenues that help in managing transitions by improving adaptability.

The purpose of the paper is towards developing a perspective that provides a heuristic and analytic view that helps in understanding socio-technical changes. Heuristic and analytic view assist practitioners to respond with appropriate actions to better manage transitional changes, adaptation-selection. The heuristic and analytic view represent not only the factors acting at various levels and representing it as an ontological reality but

also assists practitioners in better understanding the complex interplay of developments. In doing so, practitioners can desist from taking decisions based on a single parameter such as cost, when inevitable, can better understand the trade-offs.

The composition of this paper is as follows. In the next two sections 2 and 3, the author discusses research questions and methodology. In the subsequent section, section 4 the author discusses the perspective that provides a heuristic and analytic view to analyze IT Services as socio-technical transitions. The author, in Section 5, discusses the details of the selected case study, followed by section 6 that further elaborates the key aspects of perspective and organizational activities. These activities assist organizations in developing capabilities to manage in transitions. Finally, the last section lists the limitations of this research with directions for future research.

2. Research questions

Socio-technical transitions require firms to select from diverse routines and retain routines that help them to stay competitive. This selection process does not follow a deliberate optimizing choice between alternatives. Various pressures influence the organization's selection process and vary based on the domain in which organizations operate. With a multi-level perspective (MLP) researchers can attempt a unique heuristic and analytic view of technological transitions (Geels, 2002). The author attempts a similar MLP for IT Services. Therefore, the author states the research question as, '*For IT Services MLP, what specific interplay of developments are necessary to manage in socio-technical transitions, and how many dimensions of MLP assist in managing transitions?*' To manage transitions, organizational adaptations contribute to the interplay of developments, thereby, assist innovations to cumulate as stable designs.

3. Case study methodology

3.1. Case study selection

IT services companies in India were around a few thousand employees in the mid-90s and by responding to industry changes did reach hundred thousand employees by mid-2000. The author gathered data from five companies that, by 2006, achieved CMMi highest rating.

These five companies for the past five years have consistently figured in NASSCOM's[1] top 10 players of Indian IT services. The author obtained relevant details from the annual report of the five companies, Figure 1, 2, 3, and 4 lists the details. These five companies compete against each. Table 1 lists the patents filed by these companies from the year 2001 to date (US-PTO, 2017). The author feels that patents filed by the companies provide a measure of their focus on innovation.

Table 1 also lists patents filed and listed against software product development companies; all the five companies had worked for these companies. From the Figures

[1] The National Association of Software and Services Companies (NASSCOM) is a trade association of Indian Information Technology (IT) and Business Process Outsourcing (BPO) industry. Set up in 1988, NASSCOM is a non-profit organization.

1, 2, 3, and 4 COMP-VT (real name made anonymous) performed differently from its competitors. From these five, the author selected COMP-VT (real name made anonymous) to examine its innovations, operational efficiency, and collaborations. COMP-VT competes in the global software services industry and its diversifications like its competitors are across technologies and industries. The scope of this work included application development, engineering services, IT infrastructure management, testing, and maintenance. The author did case selection, as mentioned in Yin (2013), and selected cases that COMP-VT provided software services for Government of India; moreover, governments interact more closely with society and COMP-VT has non-disclosure agreements with its private customers.

The IT services dynamics of COMP-VT reflect in its projects, therefore, during case selection, the author selected both Mission Mode Projects[2] (MMP) and projects that are not MMP. Cases with diverse interactions provide rich analytic and heuristic views. The author also ensured that project selection represented all three government scenarios Government-to-Business (G2B), Government-to-Citizen (G2C) and Government to Government (G2G). The author selected two cases for each category to obtain diverse interactions towards adaptations and different analytic perspectives. In doing so, the author achieved external validity by replication logic.

Table 1. Patents filed by IT services and software product companies

Company	Patents [a]		SW Product Company	Patents [a]		Innovation Labs
	Applied [b]	Granted [c]		Applied [a]	Granted [b]	
COMP-VT	518	165	IBM	67,252	14,210	IBM Labs
Competitor-1	263	54	Microsoft	32,766	3,926	Microsoft Labs
Competitor-3	67	6	Hewlett-Packard	6,090	927	HP Labs
Competitor-4	28	1	CA Technologies	1,007	241	Strategic Research team

a – as on 31-Jan-2017; b - 2001 – till present; c – 1976 – till present

[2] National eGovernance Plan (NeGP) formulated by DeitY has defined mission mode projects that have defined objectives, scopes, and implementation timelines and milestones, as well as measurable outcomes and service levels.

Figure 1. The performance of COMP-VT against its competitors – Revenue

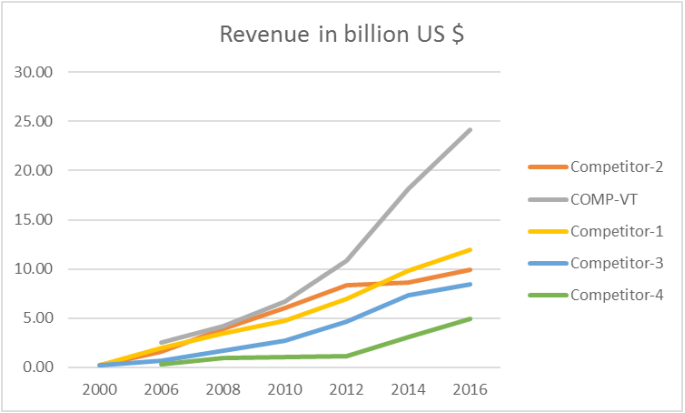


Figure 2. The performance of COMP-VT against its competitors - Employees

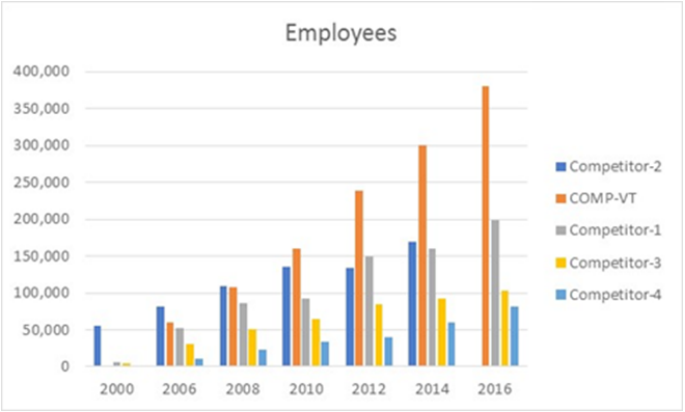


Figure 3. The performance of COMP-VT against its competitors – Operating Profit

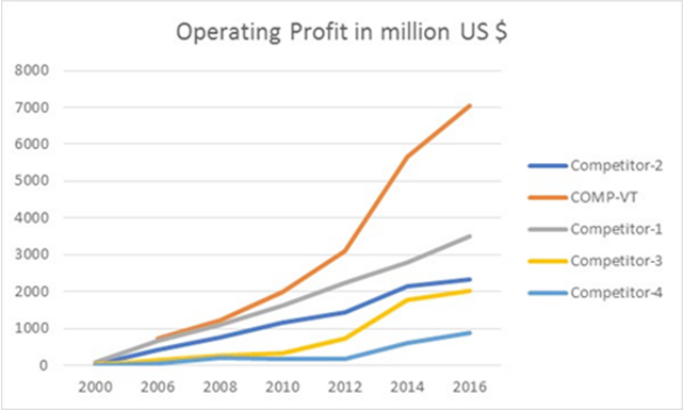
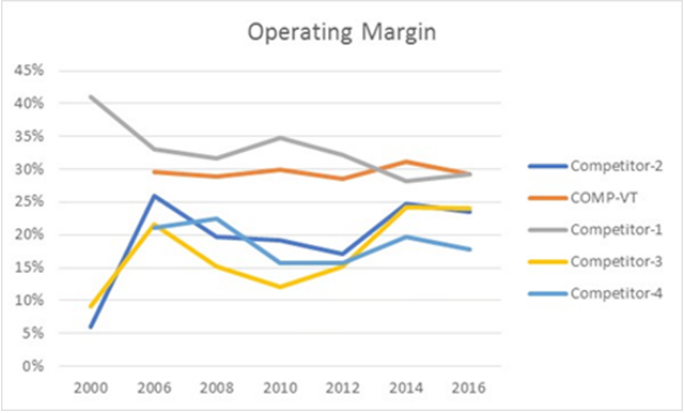


Figure 4. The performance of COMP-VT against its competitors – Operating Margin



3.2. Case study protocol

Fieldwork consisted of interviews, gathering reports, archives, records, written sources, meetings, media reports to source information. In doing so, the author achieved construct validity. With diverse methods, the author achieved data triangulation. Based on snowball sampling, the author interviewed managers from both public and COMP-VT organizations involved at various stages of software development from response-to-proposal to end-user acceptance; interviewed COMP-VT personnel from their research and development department on their objectives, direction, and support for innovation. The selected managers in public and COMP-VT organizations apart from project delivery responsibilities are also decision-makers and can affect necessary organizational changes to influence project activities to meet citizens' wants-and-needs and define product roadmap along with necessary technical architectural changes. The author spent around three to four months on information gathering. Interviews lasted approximately for 60 minutes and the author performed it either in-person or over the phone. The author interviewed respondents on key decisions, contextual situations that influenced decisions, fundamental values that influenced decision-making, use of information systems for sharing information, inter-organizational interactions, socio-technical factors, and various challenges faced by respondents at various stages of software development. With the gathered information, the author performed explanation building to understand the organizational activities with arriving at patterns wherever possible and achieved internal validity.

4. Theoretical foundations

The software development is subject to factors such as changing technologies, societal values, human trends, interaction and complexity, information management, and not to mention the role of the government for government projects. These factors change;

therefore, it is essential for organizations to re-define their existing processes to develop new software products. In other words, both product and process innovations are necessary. To meet end-users wants-and-needs, these innovations need to cumulate as stable designs along with necessary changes to organizational activities and associated interactions. This paper specifically focuses on organizational interactions both within and between organizations and not on personal interactions. In the subsequent subsections of this section, the author discusses the multi-level perspective, specific to IT services, and the influence of interactions in managing transitions.

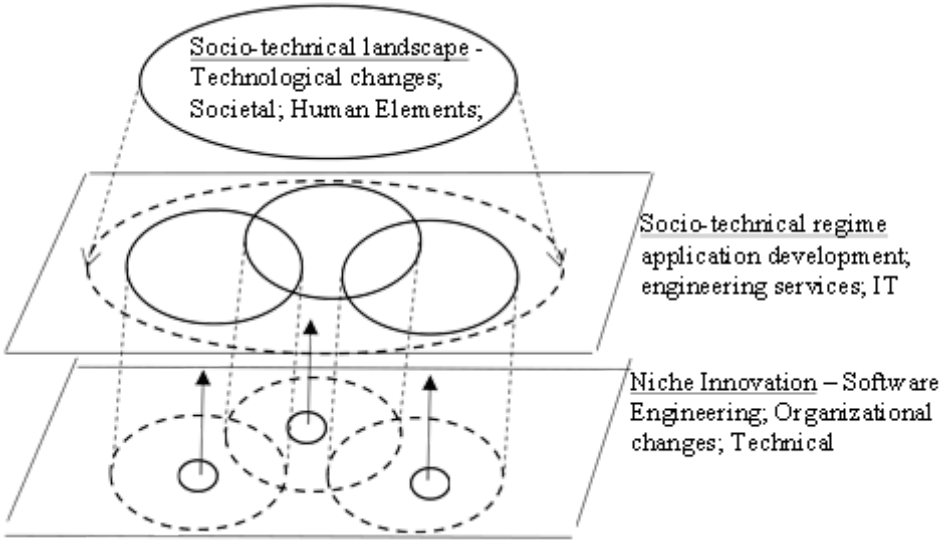
4.1. *Multi-level perspective analysis*

Geels (2002) with the neo-Schumpeterian approach first developed Multi-Level Perspective (MLP) to study transitions on steamships. Later, Geels extended it for aviation (Geels, 2006); biogas (Raven & Geels, 2010), electricity (Verbong & Geels, 2010), Dutch nuclear energy (Geels & Verhees, 2011) and British coal (Turnheim & Geels, 2013).

MLP consists of three structural, not hierarchical, levels. These levels are macro, meso and niche-innovation levels. In this paper, the author refers to niche-innovation as niche. The macro level applies pressure on the meso, and niche levels, actors at the meso and niche respond to these pressures. To respond to the pressures, innovations invariably occur at niche levels. These innovations need to cumulate and stabilize into designs at the meso level or the socio-technical regime, in this paper referred to the regime. The definition of the regime is '*an analytical concept that can be applied to empirical topics of different scope*' (Geels, 2011), pg. 31. The cumulation and stabilization of designs compel actors to directly negotiate rules in the regime (social-institutional) and rules in the regime change indirectly by selection process (evolutionary economics). The factors that induce innovation are both sociological and evolutionary economics; the term 'socio-evolutionary' coined by Geels and Schot (2007). Meso level provides normal innovation patterns while radical innovations happen in niche innovations (Smith et al., 2010). Radical innovations produced by niche-innovations do influence regime but based on differences in timing and nature (Geels & Schot, 2007). When external factors trigger transitions in the regime, the extent of development of niche-innovations decides the timing. The dimensions of MLP are structural, temporal, and spatial (Raven et al., 2012). The macro level also referred to socio-technical landscape, applies pressure on the regime and niche levels. The factors that apply pressure at a macro level are technological changes, social, human elements, and regulations. In this paper, the author refers to the socio-technical landscape as landscape. Figure 5 depicts the three MLP levels.

In IT services, the organizations that perform software development either offshore, near-shore or onsite form the regime. Actors gather requirements, develop, test and release the software. Post-deployment and operations activity also occur at the regime level. The scope for innovation varies based on the phase of the activity in the software lifecycle from requirements to deployment and operations. The macro level pressures and end-user wants-and-needs drive innovations at the niche and regime level with radical innovations at the niche level.

Figure 5. MLP framework for socio-technical transitions for IT services



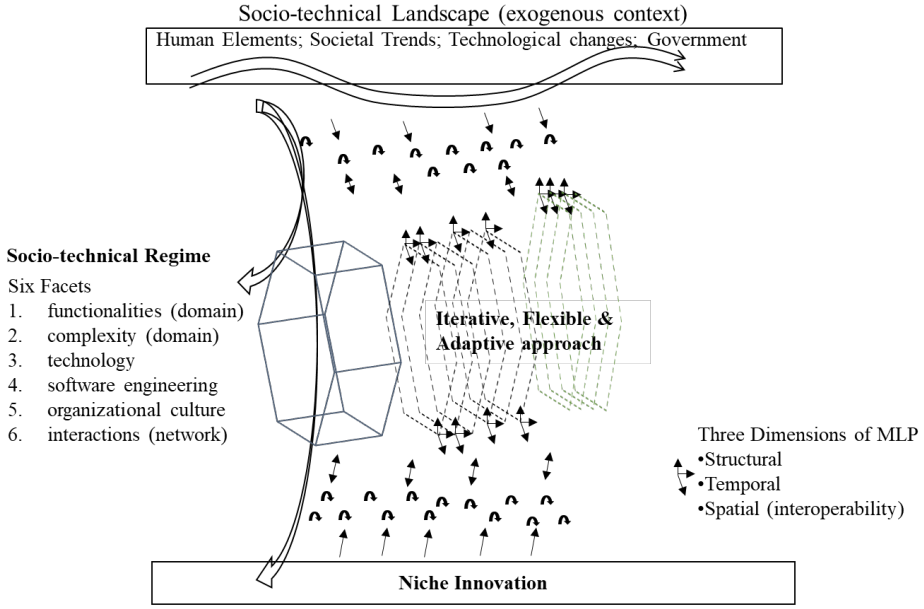
Source: Adapted from (Geels, 2002)

Technological changes include the latest developments in ICT involving cyber-infrastructure, security, architecture, mobility, virtualization, analytics and so forth. Along with technological developments changes do occur in social interactions between and among groups, communities, and societies. The societal trends to address demographic and economic changes along with issues relating to digital-divide, political and social tensions. Changes at the technological and social level also trigger changes to human elements. Privacy, identity, adjustment and learning, trust, autonomy, and the integrity of human elements play a crucial role. Technological and social changes influence human elements, influence each other. Finally, the governments in the geographies that IT services companies operate do influence the strategic, tactical, and operational activities of IT services companies. The challenge for innovation no longer rests solely in economic potential but also in the societal changes induced by innovative activity and the consequences of this for environmental and social sustainability (Smith et al., 2005). Therefore, societal sustainability defines the cumulation of innovations into stable designs.

The regime level actors interact with actors within their organization and with actors in customer organizations. Actors interact with rulesets, referred to as interoperations. The software consists of knowledge work, rarely with any physical manifestation to aid actors as they solve problems; moreover, tailoring of software development does occur to meet customer wants-and-needs. Therefore, it is imperative for software services interoperations to account for unevenness, heterogeneity, and asymmetry. Spatial dimension refers not only to physical relating to structured interaction between social and economic entities but also to unevenness, heterogeneity, and asymmetry (Raven et al., 2012). Software being knowledge work, knowledge management and

information sharing play a key role in the spatial dimension. Therefore, structural, temporal, and spatial dimensions of MLP capture the complex dynamics of IT services. Figure 6 represents MLP for IT Services. IT organizations do provide IT services to both businesses and governments, a similar MLP framework for E-Governance does exist and developed by Kompella (2017, pg. 7); however, Figure 6 is specific to IT services by IT organizations.

Figure 6. MLP framework for socio-technical transitions of IT Services.



Source: Adapted from (Geels, 2002)

External triggers not only influence the transitions, but also the pathways the transitions do take. Geels and Schot (2007) arrived at trajectories or pathways that the transitions can take place. Transitions happen, and actors do not plan and coordinate transitions to occur. This paper is on the assumption that transitions are not controllable but only managed. Smith et al., (2005) arrived at a different typology based on two axes, resources, and coordination with four trajectories namely endogenous renewal, re-orientation of trajectories, emergent transformation, and purposive transitions. Smith et al., (2005) assumed that transitions are controllable by resources and coordination. To manage transitions, actors coordinate their actions based on the alignment of their visions. The alignment of their visions needs investigation rather than assumed. The reasons for the alignment of visions is out of scope for this paper.

The trajectories arrived by Geels and Schot (2007) and used in this paper are 1) reproduction, 2) de-alignment and re-alignment, 3) transformation, 4) technological substitution, 5) reconfiguration and 6) sequence of transitions or crossover of trajectories. The sixth trajectory sequence of transitions involves the combination of the five trajectories. Actors due to budget, timelines, and the dearth of resources do plan a

crossover of trajectories to reach the desired trajectory. These trajectories influence software development phases especially, requirements engineering. Transitions happen in spatial, structural, and temporal dimensions with various combinations of social-science ontologies coming into effect resulting in highlighting certain aspects of social science and background others (Geels, 2010).

4.2. Interactions and innovations

Requirements engineering occurs before and during product development. Requirements define the product vision and strategy and develop product roadmaps. Before finalizing requirements for a project, actors perform activities that analyze business opportunities and arrive at market analysis, business plan, risk assessment, and trade-off analysis. Author terms these as upstream activities. Activities that commence from requirements finalization as downstream activities. Decision-making in upstream activities involves heterogeneous communities of an organization. When heterogeneous communities involve, actors' interoperations to address the factors of spatial dimension with collaboration and communication. Actors can bring value propositions to customer's product line by combining interoperation with software engineering practices and domain knowledge. Interoperations that address spatial dimension factors also assist in performing iterative development. An iterative software development helps in addressing a few challenges of traditional development (Boehm, 2000) and (Nuseibeh, 2001). Iterative development requires not only changing mindsets of both actors in public and COMP-VT organizations but also necessitates increased interaction.

Regarding mitigation of all requirements engineering risks, it is not attainable with iterative development (Ramesh et al., 2010). Iterative methods do bring agility, but exhibiting emergent agility is essential to create change or proactively or reactively embrace change and learn from change (Iivari & Iivari, 2011). Therefore, to meet the changes demanded by the landscape and end-users coupling iterative development with increased interaction and novel engineering methods and practices are necessary to display emergent agility.

Actors at the regime level perform interoperations with the combined knowledge of software engineering practices, technology, and the domain. Software engineering practices refer either to traditional or iterative software development methods where technology refers to programming languages and testing with the associated framework and its components. Domain refers to the functions performed by the customer with the developed software, for example, manufacturing, retail and so forth. These are the three areas where IT services organizations can incubate ideas and develop innovations. Based on the organization's vision and emphasis on innovations, organizations develop innovations that are either radical or incremental. In these three areas, organizations perform innovations either in separate entities or by merging with organization's delivery business units. With these innovations, organizations can aim either incremental or radical innovation. In certain scenarios, innovation focus areas are on the downstream side of software development, for example, providing qualification and compliance for testing of products for their customers. Indian IT services companies bundle these as

service units to provide service offerings to their customers. These downstream level innovations are incremental innovations to bring service level improvements that competitors can imitate. Innovations at upstream level require unique a combination of software architecture, interacting with heterogeneous communities and translate vision into product roadmap; therefore, when organizations attempt innovations at the upstream level of software development, innovations assist organizations to not only solve customer problems with novel ideas but also provide lead over their competitors. These innovations are hard to imitate by competitors.

Using interactions when organizations develop absorptive capabilities, organizations can respond to coevolution requirements (Van den Bosch et al., 1999). Absorptive capabilities require organizations to collaborate with the environment and develop collaborative capabilities. Organizations policies, manuals, and procedures refer to their system capability. Organizations with system capabilities collaborate between organizations (coordinative) and among multiple organizations (combinative). Two views can explain organizational interactions, namely 1) market-and-action, and 2) network-and-interaction (Ford & Håkansson, 2005). One is based on action and other on interaction, with different approaches to structure and processes. In Table 2 author highlights the differences between the two views in the context of IT software services.

Table 2. Market-and-action and Network-and-interaction

Characteristic	Market-and-action	Network-and-interaction
Actions emanate from	Single actors	Network of actors
Behavior	Atomistic - Focus on common modes of behavior	Particular – Encourage uniqueness
	Stable and predictable	Dynamism – flexible and agile to meet diverse situations
Solutions	Homogeneous	Solutions customized based on domains complex dynamism.
	Architecture – evolving, dynamic, complex and integral.	Architecture – evolving, dynamic, complex and modular.
Communication	Hierarchical	Open and collaborative
	Compartmentalized	Boundaries are flexible and change as necessary
Motivation	Command and control	Mentoring and Empowerment
Experimentation	Limited	Encourage experimentation; fail early fast.

Decision-making	Centralized strategic and tactical decisions with few stakeholders involved. At the operational level, decentralized.	Strategic and tactical decisions involve various stakeholders, final decision with key stakeholders. At the operational level, decentralized.
	Finalize at the start; subsequent stages less scope for changes.	Decision-making encourages delayed binding with scope to allow last-minute changes
Relationship:	Competition drives relationship	Collaboration drives relationship
	Inter-organizational interactions are sporadic	Orchestrate inter-organizational interactions
Links and Bonds	Technical linkages (demand-driven)	Technical – Leverage linkages to resolve problems (Problem-driven)
	Administration – bureaucratic	Administration – less bureaucratic
Links and Bonds	Commercial – a key component in decision-making	Commercial – Relationship key for decision-making
	Actors – history influences opinions at multiple levels	Actors – history influences opinions at multiple levels
	Economic – Compensating actors' efforts is essential	Economic – Compensating actors' efforts is essential
	Resources – agreed resources committed to activities	Resources – agreed resources committed to activities
Innovation	Commercial aspects are key. Innovations to produce immediate results	Organizations obtain competent resources, willing to commit resources for a long-term and focus on differentiation by innovation.

Inter-organizational (IO) interaction improves when organizations use IT and use ICT innovations to organize around information and arrive at new ways of getting things done (Zammuto et al., 2007). To organize around information, it is essential for organizations to shift from traditional forms of organizing to new forms of organizing (Zammuto et al., 2007). Literature refers to IT systems that enable organizational interactions as inter-organizational information systems (IOS). When organizations do add knowledge management to their IO and IOS, organizations can enhance the system, coordinative, and combinative the three components of absorptive capabilities; however, organizational actors need be aware that the applicability and usefulness of the knowledge can decline over a period (von Krogh, 2009). With absorptive capabilities, organizations can develop unique interoperations that are quite difficult

to imitate. When these unique interoperations combine with either incremental or radical innovation, organizations can better respond to external triggers to influence transitions. The unique interoperations also assist them to provide value propositions for their customers and achieve differentiation that is difficult for their competitors to imitate. Interactions considered in this paper are only from the inter-organizational point of departure and not from the inter-personal point of departure. Anyway, for a better understanding of interoperations, an eclectic mix of inter-organizational and inter-personal departures is essential (Goduscheit, 2007).

To achieve the first mover advantage, Indian IT services companies focus areas for innovation are invariably the latest market trends, for example, Bigdata, automation, infrastructure related to cloud and DevOps. Competitors of COMP-VT had their innovation as a separate entity and later aligned it with delivery business units of respective domain. With unique interoperations, it does not matter whether innovation exists as a separate entity or aligned with the delivery business unit; however, an organization can achieve special attention by aligning objectives and budgets for the innovation group. Currently, COMP-VT is continuing with its structure of innovation unit as a separate entity reporting to Chief Technology Officer (CTO). The respondent from the group remarked saying,

"*CTO group identifies research areas, and these are aligned with the latest trends in technology. Research teams require to articulate their objective, problem statement with the latest research trends in that field, progress is periodically reviewed. Apart from research output in terms of patents and publications, we are also measured on the developed software tools and collaborations with business units*".

Respondent of COMP-VT CTO group. Unlike, its competitors, architects, and other software development engineers are not in CTO organization nor do they report to managers in CTO organization. Members of the CTO organization focus only on innovation without any business unit deliverables responsibility. In the next section, the author discusses the case study findings of COMP-VT, to further understand their interoperations.

5. Case details and findings

5.1 Details of selected cases

The author selected cases that require developing a software product for the customer with a large emphasis on upstream product development. In doing so, the author can examine instances that involve a combination of innovation and interactions that provide unique interoperations that are not easily imitated by competitors. Of the five trajectories, upstream product development plays a key role in transformation and re-configuration.

In Table 3, the author discusses the case details, rationale, characteristics, and the trajectories. The author lists the MLP dimensions and its factors for all the selected cases.

Landscape: Societal trends (citizen wants-and-needs for G2C); Human elements; technological changes;

Regime: Information management; interaction and complexity
Niche: Innovative ideas in technological and business aspects.
Spatial Dimension: Pronounced unevenness, heterogeneity, asymmetry and physical.

Table 3. Selected Cases, trajectory, and key information

Objective	Key Characteristics	Challenges
Registrar of companies and workflow automation; {Trajectory – Transformation} [G2B] Government: Central Government of India Rationale • Reach out to a wider audience especially organizations: emphasis on information sharing for shared decision-making. • Consensus building among diverse groups such as legal, audit and so forth. • MMP		
Regulation of corporations and workflow automation • 45 MN pages of digitizing legacy documents; • 24*7*365 system availability ▪ 26000+ applications processed per day; 24*7 multi-lingual call center that can handle 25000+ calls per day;	▪ Web-based architecture connecting 52 front offices and 105 offices ▪ Entire workflow with a secure environment with PKI (Public Key Infrastructure) digitized with the latest verification. ▪ Integrating internal and external stakeholders ▪ Dashboards and reports with customizable details for officers at various levels ▪ Significant improvements (>250%) in transactional services ▪ Automated workflow operations related to filing, faster retrieval, managing queues, improved information sharing, improved response times, compliance monitoring, and improved payment options.	▪ An efficient legal process backed by corporate governance is necessary to make strides in ICT enabled regulation of corporates ▪ Factoring changing Landscape factors. ▪ Along with rapid changes to acts, an approach of solicitation and consensus building is essential. ▪ International legal corporate law ▪ Extensions to harness the support of well-established professional bodies.

Objective	Key Characteristics	Challenges
Ministry of External Affairs- Passport Services; {Trajectory – Re-configurations; Reproduction} [G2B and G2C] Government: Central Government of India Rationale: • Integration of various departments by process re-engineering • Emphasis on information sharing for shared decision-making • MMP		
Automate passport application	▪ Operations: Partnership with a private organization in BOOT (build own operate transfer) model. ▪ Smooth workflow segregated into three zones A (data processing), B (Verification) and C (Grant). Complete transparency with status tracking Passport Seva Kendras' (PSK) interact with citizens and process 1000 applications per day. ▪ Improved citizen experience ▪ Integration of Ministry offices across India in various states.	▪ Improvements to solicit process improvement suggestions. ▪ Further integration with police and postal departments.

Objective	Key Characteristics	Challenges
Department of Excise, Entertainment and Luxury Tax; {Trajectory – Re-configuration; Technology substitution} [G2C] Government: Government of Delhi Rationale: • Integration of various departments by process re-engineering • Emphasis on information sharing for shared decision-making • Not MMP		
Automate workflow of excise department's supply chain	▪ Tag and track all stock units from distillery or brewery units to 1650 retail outlets ▪ User-friendly dashboards and reports enable easy monitoring of data ▪ Electronic collection of revenue from manufacturers, distributors, point-of-sale sites (corporations, hotels, and restaurants) ▪ Compliance to Time Bound Delivery of Services, Act 2011	▪ Adoption of ICT enhanced routines ▪ Software development using waterfall methodology and implemented effective change management.

Objective	Key Characteristics	Challenges
Home Department Integrated IT Solutions (HDIITS); {Trajectory – Re-configurations; Reproduction} [G2G] Government: Government of Gujarat Rationale: • Integration of various departments by process re-engineering • Emphasis on information sharing for shared decision-making • Not MMP		
Build a crime and criminal information database to achieve effective crime control by enforcing law enforcement.	▪ Integrated 19 departments in Home Department of Government of Gujarat ▪ Interfaces with external (citizen, crime records bureau, courts, vendors, and so forth) and internal stakeholders ▪ Workflow automation of internal services (payroll, inventory, document management and so forth) ▪ 1,000+ offices, 70,000 police personnel ▪ Reports can capture the entire lifecycle of all the cases ▪ Post implementation support for 48 months	▪ Adoption of ICT enhanced routines ▪ Effective change management in traditional waterfall development ▪ Legal support for certain business process re-engineering (BPR) ▪ Back-up and disaster asset recovery

5.2. Interactions and innovations

The selected cases had complexity and the dynamics of any IT services projects. Software involves knowledge-intensive activities, therefore when the atmosphere encourages network-and-interaction actors can better harness individual and organizational locus of knowledge and aim at problem resolution. The challenges listed in Tables 3, 4, 5, and 6 require network-and-interaction approach. COMP-VT gathered requirements not only from the Ministry of Corporate Affairs (MCA) but also from other stakeholders. The author during the semi-structured interview did enquire the COMP-VT respondent about requirements gathering and information sharing at various stages of product development, the respondent remarked saying,

"*projects of this complexity require not just solving technical issues but require extraordinary skills such as stakeholder balancing, political skills, diplomatic skills and to push the project forward. Technical solutions we could arrive at, for other issues we could somehow pull it off because of few key committed individuals at the customer side*' – COMP-VT Respondent MCA.

"*though we have expertise with iterative methods, actors in the government organizations are reluctant to move to iterative methods of software development.*" – COMP-VT Respondent MCA.

The respondents from other public organizations echoed the same view and had apprehensions on the technical solutions. Respondents felt that the technical solution

offered by collaborating organizations need to be secure, flexible, scalable, and responsive. Though COMP-VT has patented technologies that provide required security, more confidence-building measures are necessary for meeting other non-functional requirements. The respondents remarked saying,

"*with their patented encryption algorithms, we could easily complete document signatures and other authentication and authorization activities. It meets the scalability and reliability requirements but not sure on changes required to stay ahead of the demand.*" – Public Respondent MCA

"*With full use of technology, we could easily complete some routines that were earlier time-consuming, but we require a lot of other technical integration changes to move the E-Governance frontier forward"* – Public Respondent Passport

"*Though we did provide end-user training to users, it is essential to extend it to other departments that Excise department interacts. Excise interacts with lots of departments, it definitely requires exploring novel methods of knowledge assimilation and distribution*" – Public Respondent Excise.

COMP-VT resolved technical issues that assist in completing the agreed scope of the project. IT services companies not only need to identify customers' current problems but also look forward. In the author's semi-structured discussions with COMP-VT respondents, respondents did mention that novel requirements engineering methods are necessary. The innovations lab of COMP-VT apart from latest technological trends such as the Big data, automation, cloud infrastructure, and so forth has already started work on requirements engineering especially on the non-functional requirements and filed patents with US-PTO and did start using in non-government projects. Incremental innovation in COMP-VT did resolve certain technical problems, especially in the downstream of product development but had limited actions in the upstream of product development. When the author enquired with the respondent of the COMP-VT's CTO group on their way forward, especially, on radical innovation, the respondent remarked saying,

"*Currently, employees in the CTO group are <1% of the total company employees; CTO group is looking at having unit groups that are closely aligned with the business units. It remains to be seen whether we will continue to have separate responsibilities as compared to the business units.*" - Respondent CTO COMP-VT.

Apart from the resolution of technical issues, the COMP-VT respondents also felt that the mindset of customers is important. In HD-IITS COMP-VT and customer had excellent interactions, respondents had the following to say,

"*For complex projects like HD-IITS, standardization and centralization at appropriate levels ensured achievement of the government vision along with successful completion of the project, thereby meeting objectives of both organization*." – COMP-VT Respondent HD-IITS.

"*Changes could be incrementally introduced and helped the government to move their frontier of technology adoption.*" – COMP-VT Respondent HD-IITS.

"*Home Ministry no longer considers us as a vendor but as a technology partner, contrary to other government projects.*" – COMP-VT Respondent HD-IITS.

On the contrary, respondents from Excise and passport project had the following to say,

"*Business-driven change agenda cannot sustain government actions for long, for a few instances, it may work but does not guarantee repeatability, it is dependent on the maturity of the organization."* – COMP-VT Respondent Excise.

"*Though contracts mention certain clauses, government officers expect collaborating organization not to follow it and bear the entire risk.*" – COMP-VT Respondent Excise.

"*Private organizations have a high focus on completing projects on time. With vendor mindset being more prevalent with customers, based on the project situation we need to employ innovative methods to solicit information. These innovative methods decide the project success. Any cultural transformations to overcome the mindset will be a large bonus.*" - COMP-VT Respondent Excise.

"*To address atypical cases, it is necessary to arrive at deep technical integrations with coordination with other departments, currently, we cannot participate in discussions that are beyond the boundary of our operations; they do solicit feedback once a month, and we do provide."* – COMP-VT Respondent Passport.

The selected cases followed a waterfall methodology and not iterative. An iterative methodology such as Agile require interactions like network-and-interaction. Actors are accustomed to enacting values such as safety, security, privacy, confidentiality, trust, public access, efficiency, and the effectiveness of non-ICT operations. With ICT re-engineering of activities invariably takes place; moreover, intertwining and interlinking of activities with values occur in complicated ways (Hellberg & Grönlund, 2013). Therefore, re-operationalization of values is essential. Excise project had difficulties during project execution, during the author's discussion the respondent remarked saying,

"*Renegotiation of values doesn't really happen.*" – COMP-VT Respondent Excise.

In certain scenarios, the managers had to complete their activities in subterfuge, lest the deployment and subsequent actions of activities get hindered. Respondent remarked saying,

"*Complete transparency refers to sharing selectively even with your supervisor.*" – COMP-VT Respondent Excise.

Apart from Excise and HD-IITS, other projects were MMP. Due to high command and control, MMP projects invariably exhibit governance mechanisms and rigor leading to intra and inter-organizational coordination. Competition and operational efficiency parameters did contribute to rigor and governance mechanisms in COMP_VT's operations. COMP-VT to complete the projects did synergize its intra-organizational coordination, governance mechanisms, and software engineering practices some of which are imitable. These can attribute to lead over its competitors as shown in Figure 1, 2, 3, and 4; however, COMP-VT did not use IO and IOS to enhance its interactions. The respondents did confirm to the author that, as mentioned by von Krogh (2009), as the information ages its applicability does diminish.

6. Discussion

From an approach based on arbitrage and aggregation perspective, both market-and-action and network-and-interaction are effective. When the emphasis is towards innovation and leveraging individual and organizational loci of knowledge, creating

unique interoperations become important. COMP-VT did perform interoperations and more in a market-and-action setup. The selected projects followed the waterfall, but COMP-VT for other customers does follow iterative methods such as Agile. COMP-VT did not borrow interoperations from non-waterfall projects to improve their interoperations in waterfall projects. The interactions between innovation labs and delivery business units were on a need basis and limited to the problem on-hand. COMP-VT management mandates innovation labs to interact with delivery business units and make their innovations contribute to delivery business units. The employees of innovation labs, apart from filing patents, are also evaluated on socializing and use of their ideas in delivery business units.

At the regime level, actors use software engineering practices and develop applications with development frameworks agreed with customers. Actors do arrive at innovations while performing interoperations. Competitors do replicate software engineering practices and methods, thereby, the advantages of making quality deliverables by such initiates do get easily replicated. To reduce the imitation of quality initiatives, in 2004, at the organizational level an IT services company did initiate Lean software development into their software engineering practices (Staats et al., 2011). From 2004, the IT services organization's (competitor-2) position with its competitor did not improve significantly, rather declined on parameters as shown in Figure 1, 2, 3, and 4. Organizational culture does play a key role. Transformations to organizational culture to go beyond an individual's pure interpretation of changes. Dialectical hermeneutics consider both individuals own historical understanding, in terms of the changing social structures and the individual's interpretation. When organizations attempt transformations with IT, dialectical hermeneutics become essential as they examine both social and organizational aspects (Myers, 1995). Schein (2010) defines organizational culture in three levels, the first level consists of artifacts, audible and video patterns of culture, the second level is the employee beliefs and values with the third level the basic assumptions. Kompella (2014) suggests an approach for changing organizational culture to achieve emergent agility as defined by Iivari and Iivari (2011). Network-and-interaction can assist organizational cultural change transformations.

The selected organization did encourage inter-departmental interoperations; and encouraged the use of knowledge management, system and coordinative capabilities of absorptive capability, use of ICT and knowledge management. These were more towards the aggregating their spatially distributed development centers (or resources) and in the arbitrage of information retrieval costs. In the selected cases, the interactions, though ICT-based, were more towards activity completion and not on organizational adaptations that consists of searching and learning cycles. For differentiation among their competitors, the searching and learning cycles contribute to activities that are not easily inimitable by their competitors. To develop such a searching and learning cycle, organizations need to explore new ways of doing things and includes developing unique software development interoperations and enhancing their IO with IOS. The objective of the unique software development interoperations can be towards developing an emergent agility as defined by Iivari and Iivari (2011).

The IOS does assist in developing the three components of absorptive capability and emergent agility. Along with IOS, organizations can search and learn new ICT innovations and explore new forms of organizing. In the selected cases, COMP-VT did trigger searching and learning cycles but more for arbitrage and aggregation instead can expand its innovations to develop unique interoperations. This requires its innovation group to contribute beyond the delivery business units' specific goals, which are invariably on cost-effectiveness and business growth. When organizations extend their adaptations beyond arbitrage and aggregation, it assists in the coevolution of other entities, namely society; only organizations can take that lead.

7. Conclusion

IT service companies for 15 years from the mid-90s did leverage their arbitrage and aggregation approach and posted excellent results. Government pressure to recruit no or less experienced resources from universities will continue. Companies have the option to continue to base their decision-making on transaction cost and improve their transactional efficiency. Such an action is not bereft of risks, where organizations in their attempt to increase year-on-year less than five years experienced employees may focus only on certain pressures from landscape leading to compromise on other parameters and losing their differentiation among their competitors. It is mandatory for organizations to respond to external triggers by responding with timely developed innovations that can cumulate as stabilized designs. In doing so, organizations can manage transitions where their existence is not in jeopardy. The author developed MLP with the aid of case studies. MLP provides rich heuristic and analytic views that help practitioners to understand socio-technical transitions and manage in transitions by taking informed decisions. In this paper, the author did not create a theory of how to develop or evolve or dissolve on forms of organizing to develop capabilities or approaches to change organizational culture. This is left for future research.

The author selected cases that involved government and followed the waterfall development methodology. Though the author did include projects that had defined objectives, scope, timelines and milestones, cases that exhibit more agility with iterative development methodology can provide insights into arriving unique interoperations involving interactions and innovations necessary for differentiation. A study that involves an interpersonal point of departure can also provide insights in arriving unique interoperations. The author chose COMP-VT that had instances of transactional effectiveness and incremental innovation, with no radical innovation in the selected cases. By selecting cases that have a good component of radical innovation further insights into innovations cumulating as stable designs are possible.

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PAPER

The Impact of Foreign Direct Investment on the Productivity of the Balkan Countries

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Abstract Balkan countries are trying to attract foreign direct investment, hoping that foreign enterprises, besides employment, will also convey their know-how. This will later be transferred to their national industries, where it is expected to increase productivity.

This paper examines the effects of foreign direct investment on productivity growth, university enrollment and unemployment in eight Balkan countries: Albania, Bosnia, Bulgaria, Croatia, Montenegro, Macedonia, Romania and Slovenia.

The empirical analysis shows significant results about the positive impact of both investments and FDI on productivity growth in the respective countries. Additionally, the data show a positive impact of FDI on university enrollment, but not a negative correlation between FDI and unemployment. Furthermore, the results confirm that FDI effects may have positive consequences in the host country depending on its level of economic development and institutional quality.

Keywords: Foreign Direct Investment; Productivity; School Enrollment; Balkan Countries.

JEL Classification: E23; F21; F43

1. Introduction

In recent years all the economies of the Balkan region have been vigorously seeking to draw the attention of foreign investors to the opportunities their economies have offer, in a bid to convince them to invest their capital in their countries, in the form of foreign direct investments. Countries offer to foreign companies various incentives or state-run facilities for free, or at a symbolic fee, because FDI conveys new technologies and know-how to their countries, increasing productivity and competitiveness.

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The literature suggests that FDI is credited with having a very positive impact on host countries increasing employment, wages, spillover of new technology and know-how, all of which improve economic growth and management skills (Lall, 2002; Kostevc et al., 2007).

Our study analyzes the impact of FDI on economic growth and productivity, using data provided by the World Bank and by focusing on the Balkan region countries, those that are already part of the EU as well as those aspiring to become part of it. Slovenia, Croatia, Bulgaria and Romania are already EU member states and are considered developed countries from the economic point of view, while Albania, Bosnia, Serbia and Macedonia are seen as developing countries aspiring to join the EU. It interesting to understand the differences that FDI impact displays on various countries from the economic and institutional point of view, and to understand if the effects of FDI are different for countries at different stages of economic development and integration. The study is based on macroeconomic panel data from 1990 to 2016 and analyzes how FDI affect productivity, university enrollment and unemployment in host countries.

The paper proceeds as follows: section 2 reminds the literature on FDI and their impact on host countries, with a focus on Balkan countries. Section 3 introduces data and methodology. Section 4 shows the results of the panel data analysis and section 6 concludes.

2. Literature Review

2.1 FDI determinants

Among the theories concerned with the study of FDI and the internationalization of enterprises, there is the product life cycle theory that breaks down the life of a product in four stages, where it may be economically profitable for the enterprise to develop and produce this product abroad. Vernon talks about how new products are generally created in developed countries, and later when the manufacturing process is consolidated and standardized (i.e., in the final stage of the product life cycle), the enterprise often decides to produce the product in another country at a lower cost, delocalizing production through FDI in countries with cheap labor (Vernon 1966). Knickerbockers (1973) supported the idea that enterprises delocalize production abroad, in a bid to counter each other's investments in new foreign operations. This is especially the case in oligopolistic markets, where their main goal is securing and maintaining their market share.

Caves (1993) adds that firms follow competitors in their investments abroad counter each other's investments due to market uncertainty and risk aversion. Hymer (1960, 1972) and Kindleberger (1969) show that an enterprise invests abroad because there are advantages in relation to competition, benefitting from the economies of scale, specific advantages, or the ability to evade trade restrictions imposed by the governments of the countries where FDI is applied.

Dunning (1977), through the OLI (Ownership , Location, Internalisation) approach, demonstrates that an enterprise should have three types of advantages to be able to make an investment abroad, i.e., advantages related to the characteristics of the country in which it will be located, ownership advantages, advantages in internationalization,

i.e. those advantages deriving from the acquisition of the local supplier, i.e. from the upstream and downstream stages in the production process which were previously carried out by the foreign enterprise.

Referring primarily to the advantages of ownership and localization, Helpman (1984) indicates that a multinational company invests in a foreign country if there are differences in the relative allocation of factors of production under the assumption that transport costs are zero.

Krugman (1998), indicates through the theories of international trade and productive specialization, that it are not only exogenous factors, such as the different allocation of productive factors, which push companies to invest abroad but also the endogenous dynamic factors linked to the increasing returns to scale that can be either internal, that is within the production plant, or economies of scale outside the enterprise determined by *spillover* effects.

Buckley & Casson (1976) explain FDI through the *specific location* advantages (both of economic nature as well as those of socio-cultural and political nature) that in the Balkan region are undoubtedly present: low cost of inputs, cultural affinity with developed countries such as Italy, as well as various forms of investment stimulation.

Kinoshita & Campos, (2003) add the positive role of natural resources and agglomeration infrastructure of the host countries. Javorcik & Wei, (2000) and Kersan-Skabic & Orlic, (2007) show that FDI is negatively affected by corruption. For Rodrigues & Pallas (2008) FDI depends foremost on labor cost and market dimensions of the host country, whereas for Sun (2002) FDI depends mainly on the quality of human capital of the host country.

In their empirical study, Kostevs, Redek & Susjan (2007) emphasize that FDI can be attracted through an increase in institutional quality, good governance, rule of law and macroeconomic stability. Muco (2015) adds that the protection of property rights and the possibility of selling land to foreigners are necessary in order to have "quality" and long-term FDIs. Pournarakis & Varsakelis, (2004) conclude that institutional efficiency and an efficient judiciary system are needed in order to be able to attract FDIs. The authors in question in their next study have made a classification of factors influencing FDIs on the supply side (competencies and cost of labor force, taxation of enterprises) as well as on the demand side (market dimensions and the prospects of economic growth, Pournarakis & Varsakelis, 2004).

2.2 The impact of FDI

As far as the FDI-related benefits are concerned, various empirical studies show that FDI is a determinant fact in economic growth in the long run. For Borensztein et al. (1998) and Findlay (1978) FDI stimulates the transfer of technology, bring about improvements in managerial competencies, know-how, and employment growth. Lee (2002) adds that FDI brings about a growth in exports in the long run in addition to GDP growth, employment growth and technology transfer.

According to Jones (1996), FDI complements internal saving, which contributes to the formation of national capital, thus it affects positively the growth of domestic

investment as well. Lall (2002) affirms that FDI always has positive effects on GDP although these effects are sometimes difficult to be highlighted. In some cases, these effects may be re-dimensioned for various reasons, such as social, political, technological or lack of competitiveness on the part of enterprises of the host country.

Cipollina et al. (2012) provide robust evidence on the positive and statistically significant growth effect of FDI in recipient countries, in a study on developed and developing countries. Buckley et al. (2007) finds positive spillover effects on productivity in China.

Haskel et al. (2007) estimate that a 10 percentage-point increase in foreign presence in a U.K. industry raises the TFP of that industry's domestic plants by about 0.5 percent.

On the other side, the results of Girma et al. (2001) indicate that, in UK, foreign firms do have higher productivity than domestic firms and they pay higher wages, but there is not aggregate evidence of intra-industry spillovers. Also Rodrik (1999) is not convinced that FDI can have a global positive impact on host countries, but acknowledges a positive relationship between FDI and productivity growth of host countries. Sometimes FDI can generate a negative spillover to the domestically owned enterprises in the host country by draining the most qualified human capital out of them, because of a higher pay. Consequently, domestic enterprises will have at their disposal a less qualified human capital, which in turn means lower productivity.

Brenszteina et al. (1998) analyzes 69 developing countries over '80s and '90s, and suggest that FDI is an important vehicle for the transfer of technology, contributing relatively more to growth than domestic investment. However, the higher productivity of FDI holds only when the host country has a minimum threshold stock of human capital.

2.3 FDI and the Balkan Countries

The Balkan region has been a meeting point of different cultures and ethnicities for centuries. The international pressure on the part of the great economic powers has left its mark on the economic policies and the development in the region with important implications. Even today, a good part of the Balkan countries are characterized by an uncertain future in regards to domestic economic stability as well as international integration (Muco, 2014).

It is interesting to see how the Balkan countries that were not deeply affected by Turkish rule, were the first to integrate into the EU (Slovenia and 2004, Bulgaria and Romania in 2007, Croatia in 2013).

Macedonia, Montenegro, Serbia and recently Albania have been granted candidate status. Kosovo and Bosnia and Herzegovina have a lot of work to do before they can start the integration process (Muco, 2014; Muco, 2015).

The public opinion of the Balkan countries sees integration into the EU as the beginning of a new era. This is mainly due to the fact that integration into EU would bring about economic and political stability, the latter would also lead to an increase in FDI, which would bring more employment and wellbeing for citizens (Estrin & Uvalic, 2013).

To make possible the integration into the EU, the Balkan countries have always striven to fulfill all the recommendations of the international institutions such as the

IMF, WB, EU and at the same time have embarked on a number of initiatives to attract foreign investment (Muco, 2015; Estrin & Uvalic, 2013). Such as, the liberalization of commercial exchange between them and EUs, mass privatization, strengthening of institutions, improvement of entrepreneurial context, lowering of tax rates, and the creation of a common market of the western Balkans.

According to Nicoletti et al. (2003), Kinoshita & Campos (2003) market size and growth prospects are the primary factor in attracting FDI. To all this, we add the low cost of labor force, the prospect of economic growth, natural resources and the wage gap between East–West EU countries, which mean that FDI in these places keeps growing more and more (Bruno, Crinó & Falzoni, 2006). According to data published by World Tax in 2018, the Balkan countries have a highly competitive fiscal system regarding investments. If we refer to the table below, we see that countries that are not yet part of the EU and aspire to integrate into the EU have even lower tax rates compared to those that are already in the EU. Regarding the low salaries in the aforementioned Balkan countries, according to Eurostat data (2016), the average gross salary is 773 Euro. In addition to low wages and quotas, the Balkan countries have a geographic advantage, since they are close to economically developed countries such as Italy, Germany and Austria (Holland & Pain, 1998).

Table 1: Tax rates by country

Balcan States	Corp. Inc. tax	Cap. gain tax	Bran. tax	Divid.	Interest	Royalties	Bran. remit. tax
Albania	15%	15%	15%	15%	15%	15%	0%
Bulgaria	10%	10%	10%	0%	5%	10%	0%
Bosnia	10%	10%	10%	5%	10%	10%	0%
Croatia	18%	12%/14%/36%	20%	12%	15%	15%	0%
Macedonia	10%	10%	10%	10%	10%	10%	0%
Montenegro	9%	9%	9%	9%	9%	9%	0%
Romania	16%	0%/16%	16%	5	16%	16%	0%
Slovenia	19%	17%	19%	15%	15%	15%	-
Serbia	15%	15%	15%	20%	20%	20%	0%

Source: World tax, 2018

In the last 15 years there has been a significant growth in literature and empirical studies on FDI in Balkan countries. This is not surprising given the fact that FDI has played a very important role on the economic performance of the majority of the countries in the region, throughout the economic transition process. However, we want to stress that some of the countries are still in transition despite the fact that more than 25 years have passed since the big change of the economic system.

Bartlett (2009) signals that much of the FDI inflow to the region has been linked to privatization in telecommunications, banking and oil refining rather than new green field investments, and the pattern of inflow over time has been irregular and lumpy,

following the vagaries of the privatization process. Estrin & Uvalic (2013) emphasizes that Western Balkans countries receive less FDI in comparison with the other transition economies. Kostevec at al. (2007) confirmed a significant impact of various institutional aspects on the inflow of foreign capital and showed that in the observed period the quality of the institutional environment significantly influenced the level of foreign direct investment in transition economies. Brada et al. (2006) study the effect of transition and of political instability on FDI flows to the transition economies of Central Europe, the Baltics and the Balkans and find that FDI to transition economies unaffected by conflict and political instability exceed those that would be expected for comparable West European countries. In the case of Balkan counties, conflict and instability have reduced FDI inflows below what one would expect for comparable West European countries. Bevan et al. (2004) study the determinants of FDI from Western countries, mainly in the European Union (EU), to Central and Eastern European ones, and find the most important influences to be unit labor costs, gravity factors, market size, and proximity.

However, in the majority of these countries in the early 1990s[1] there was a rise in inward FDI inflows and consequently there has been a large number of empirical studies on the impact of FDI on the region. With regard to effects of FDI in Balkan Countries, Holland et al. (1998) suggest that spillovers from the stock of inward investment and international trade both have a positive impact on productivity in the transition economies, with the beneficial effects of FDI being higher in the more market-orientated economies. Javorcik (2004a), using firm-level data from Lithuania, produces evidence consistent with positive productivity spillovers from FDI. Campos and Kinoshita (2002) find a positive and significant impact of FDI on economic growth as theory predicts, with a study on Central and Eastern European and former Soviet Union transition countries between 1990 and 1998. But they underline that FDI has a positive impact on productivity growth only when the host country possesses a minimum level of qualified human capital.

3. Data and Methodology

The data used in this study enables us to evaluate the impact of FDI on the productivity of host countries. To conduct this study, we have created a panel data of 8 countries from the Balkan region with transition economies (Albania, Bulgaria, Bosnia, Croatia, Macedonia, Romania, Serbia, Slovenia). In fact, there are 12 countries in the Balkans but we have excluded Turkey and Greece. We have excluded Greece, because it became part of the EU in 1981, besides, the two aforementioned countries differ from the historical and economic point of view from the other Balkan countries. We have also excluded Kosovo and Montenegro, because they have declared their independence relatively recently and there are few data on them.

The time series for the countries in question covers the period from 1990 to 2016. The

[1] Before the 1990s, the FDI inflow for the majority of the Balkan countries was very low, because of political and economic instabilities. This instability continued even after the 90s, leaving lasting impressions on the Balkan region as well as unresolved issues that continue to exist even today. See: Estrin, S., & Uvalic, M. (2013). Foreign direct investment in transition economies: Are the Balkans different? P.11.

number of panel observations is 180 because of the lack of some data on certain years. We chose to use only macro data published by World Bank for the respective countries. We declined to use non homogeneous micro data valid only for few years. Their use would lead to unreliable results and we would be mistaking in sample collecting, as different countries use different methods of producing micro data.

Time series are very important for our study in order to have a lot of observations and to understand more clearly what happens to the FDI inflow when a country becomes a member of the EU. Here we add the fact that some of the countries emerged as market economies in early 1990s, and as a result foreign investors started to appear in these years, even though at first these investors were few and kept a wary eye on investing in these countries.

The main goal of this study is to highlight through the empirical analysis the impact of FDI on productivity, unemployment and university enrollment in host countries.

Grote (1966); Borensztein et al. (1998); Findlay (1978); Buckley et al. (2007) affirm that FDI conveys not only capital but also new technologies, production capacities, management capacities, employment, innovation and know-how.

Of course, all these effects become evident only when investors are "serious", make long-term investments, and do not move to a country just to exploit the low cost of labor force without leaving much of a trace in the host countries. (i.e. when the FDI really contributes to GFCF growth).

As we mentioned above, productivity, university enrollment and unemployment served as a dependent variable. University enrollment serves as such because when a foreign investor chooses a place to invest in, in addition to the overall cost of production and political stability he also seeks qualified labor force that is quicker to gain new knowledge, consequently the costs of training workers is lower.

As we initially thought, the arrival of foreign investors in a developing country is a strong signal for young people to enroll in universities, as the adoption of new technologies requires skilled work force. We will empirically verify that FDI stimulates education. The latter stimulates economic growth and development in the long run (Mitaj, Muco & Avdulaj, 2016). In turn, a growing enrollment in universities will make the country more attractive to foreign investors and may lead to salary increase for host countries (Bruno, Crinó & Falzoni, 2006).

We also study unemployment, since in the early 1990s a part of the countries in question experienced an economic collapse which was reflected in a sharp drop in industrial output. This drop started with the stabilization program in ex-Yugoslavia and the termination of the central planning system in Albania. According to Barlett (2008; 2009), those factors led to a deindustrialization, which was felt more in Albania, where industry went from 58% of GDP in 1990 to 10% of GDP in 2000. Something similar happened in Croatia and Macedonia although the effects in these countries were more moderate. In these countries, entire areas experienced an economic and social collapse. A good part of the public enterprises, which were still in operation, were ineffective. They were overstaffed, which is a ubiquitous phenomenon in countries with high index of corruption (and the Balkan countries are such), where governments prefer

to artificially increase employment in publicly-owned companies in a bid to get more votes in election. Considering these facts, the goal of this study is to empirically verify that FDI stimulates employment or indirectly reduces it through the privatization of state-owned enterprises when foreign investors automate the manufacturing processes consequently making workers redundant.

In this paper, data on FDI net flow and Gross Capital Formation (GCF) is always expressed in % of GDP. The positive aspect of this panel data is the length of the time series, considering the fact that most of the Balkan countries overthrew their Communist regimes in the early 1990s. The data before the fall of Communism does not make much sense for our study.

A negative aspect of our panel data lies in the lack of data on the evolution of wages and poverty. Having this data would make the study more complete and highlight the productivity and the positive or negative impact of FDI on economic growth and social welfare in the host country. It would be interesting if we were able to measure productivity in different sectors of the economy to see which sectors of the economy FDI impacted the most. But there was a lot of inconsistency in the published data on employment according to the relevant sectors which is why we decided not to take these data in consideration.

4. The Impact of FDI on Productivity, Education and Unemployment

In this section we will discuss the empirical results of our study. As we mentioned in the paragraphs above, our goal is to exhaust the impact of FDI on the economies of the Balkan region, both on countries that are already part of the EU and can be considered developed countries such as Slovenia, Croatia, Bulgaria and Romania as well as on the countries that are considered developing countries such as Albania, Macedonia, Serbia and Bosnia. To make this possible, we will try to go past the traditional factors identified by a wider literature on FDI in the Balkan region (for example GDP growth, export growth or employment growth).

Taking into account the impact of FDI on productivity and enrollment in universities, indirectly we are also studying the impact of FDI on both GDP growth and the long-term economic development of a country in general.

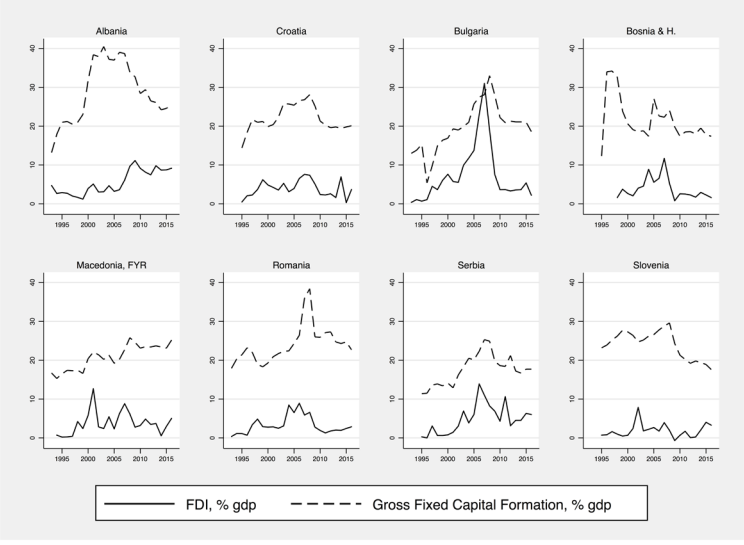
As mentioned in the literature review, there is a large number of economic studies that evaluate the impact of FDI on the productivity of host countries (Buckley et al., 2007; Girma et al., 2014; Javorcik, 2004; Smarzynska, 2003). But all of these studies use micro level data, at the business level, for short time periods and only for specific countries. This makes it impossible to juxtapose our results with the aforementioned studies. We start with a graph analysis showing the performance of FDI and the performance of Gross Fixed Capital Formation (GFCF). FDIs increase productivity/economic growth if they impact GFCF, meaning they become an important component. GFCF includes both domestic and foreign investments. Thus, the GFCF progress cannot be taken as a proxy only for domestic investments. What matters is the FDI-GFCF relationship, which is highlighted in the graphs. FDIs may not even become GFCF if used for pure speculation.

Figure 1 shows quite similar trends for FDI and GFCF. An interesting fact here is that there is a significant FDI increase shortly before a country joins the EU and this substantial increase continues for some time after joining the EU. Also, referring to the WB data and the following graphs, we see a decrease in FDI and domestic investments for most of the countries in question in the 2008-2010 period.

If we focus on the graphs for certain countries we see that Serbia displays the highest FDI decrease for the period in question, ranging from 14 billion in 2008 to 6.4 billion in 2010. FDI and GFCFs have relatively had the same similar trend for most countries the only exception being Macedonia where the decrease is not felt as much. From this it can be assumed that foreign investors in the Balkan region are mainly from the EU countries and that the economies of the Balkan countries are closely related to the economies of the developed countries of the EU that are close to them from the geographic point of view, such as Italy, Germany, Austria, Greece etc. Some of the countries in the Balkan region were not directly affected by the economic crisis; however, the effects of the economic crisis can be seen on the decrease of FDI coming from the developed EU countries directly affected by the crisis. Thus, the onset of the crisis in EU countries led to a decrease in FDI in the Balkan countries.

Another interesting fact is the performance of GFCF in Albania and Romania. For Albania, we can say that from 1998 to 2010 there has been a GFCF increase (except for 2001-2002 and 2005-2006, which were post-election periods).

Figure 1. FDI in % of GDP and Gross Fixed Capital Formation in % of GDP



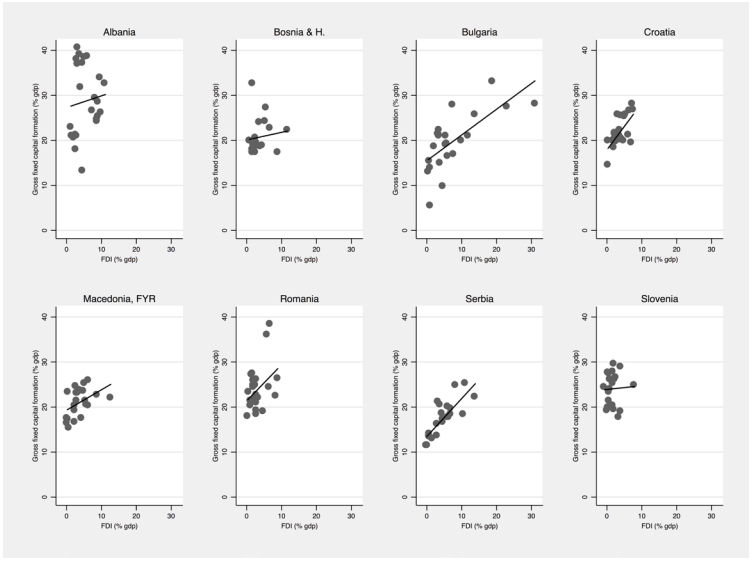
In Albania, both right and left governments have always sought to support economic growth by investing in infrastructure such as the construction of new roads. Often, these investments are funded through loans. These investments together with a steady increase in remittances (from 1990-2010) and FDI growth have supported GDP growth

over the years. But with the onset of the crisis and with the surpassing of the public debt limit (60%) after 2010 there has been a decline in domestic investments.

Whereas in Romania from 2000 to 2009 there has been a steady increase in GFCF. The major part of this capital has been in the form of help or loans secured through IMF, IBRD, USAID and the privatization of large state-owned enterprises. Throughout the period in question, domestic investments have been around 25% of GDP. These investments have made an important contribution to Romania's economic growth for the period in question, which has ranged between 6 to 8% a year.

Figure 2 shows the correlation between FDI and GFCF. In Bulgaria, Croatia, Romania and Serbia the correlation between FDI and GFCF is stronger than in other countries., suggesting that FDI is more productive in these countries.

Figure 2. The correlation between FDI and Gross Fixed Capital Formation



FDI is not always used to finance the formation of fixed capital; FDI is often used to cover the deficit or to pay off a loan, and these investments are not always included in gross fixed investments.[2] Below we will see the empirical results of FDI impact on the productivity in Balkan countries. Working with time series, we start analyzing stationarity: Productivity results to be I (1) (non stationary), while Fdi_gdp and GFCF are I (0).

Then, to analyze the relationship between a variable I (1) and an I (0), we use a Vector Auto Regression (VAR) approach including the lag value of the dependent variable between the regressors. Consequently, the regressor explains most of the regression. The table shows a very high R^2, but this is because essentially we are using VAR.

[2] See the definition of FDI by WB: FDI can be used to finance fixed capital formation, however it can also be used to cover a deficit in the company or paying off a loan. Thus, you cannot say FDI is always included in gross fixed capital formation. Note that some countries, such as Luxembourg, have large figures for FDI because they serve mainly as financial intermediaries, offering very favorable conditions such as tax exemptions for holding companies and corporate headquarters.

Empirical results show that FDI has a positive impact on productivity. This result is robust even if we use different specific estimates (Standard fixed effects, or GLS with dummies for country fixed effects).

From the table we see that investments in general and FDI are positively correlated with productivity. But, if we group together FDI and investments in general, then we see that productivity is correlated only with investments and not with FDI, that is why we deduct that it is investments that increase productivity whereas FDI is determined when it completes investments.

Thus, given the fact that FDI is decisive because they complement investments in general, and bearing in mind the comments on the graphs in the second table, we will divide the sample into 2 sub-samples based on the aforementioned correlation.

Table 2 shows that FDI has an important role in the countries which have a strong correlation with investments in the broad sense, i.e. Bulgaria, Croatia, Romania and Serbia.

Table 2 once again highlights the quality of FDI, i.e. the latter have a role in productivity if they are related to investment, and this can also be said at this point on the impact on growth[3]. In the following table, university enrollment is our dependent variable and FDI is our independent variable. In this model, twice-lagged FDI has been used due to the fact that students in high school most of the time do not decide to enroll in university at the last moment, they often make that decision some time ago.

Table 1. The impact of FDI and GFCF on productivity

Dep. Var: ln(productivity)	Panel GLS (heteroskedastic panels)	Panel Fixed Effects (robust standard errors)	Panel GLS (heteroskedastic panels)	Panel Fixed Effects (robust standard errors)	Panel GLS (heteroskedastic panels)	Panel Fixed Effects (robust standard errors)
ln(FDI)	0.006**	0.011*			0.004	0.006
ln(Gross Fixed Capital Formation)			0.06***	0.10**	0.03**	0.04***
ln(Productivity) (t-1)	0.93***	0.93***	0.89***	0.88***	0.93***	0.92***
Constant	0.65***	0.71***	0.86***	1.07**	0.62***	0.67***

[3] In Albania, during the period 2006-2009 FDI inflow was very important. The bulk of this flow went to the privatization of the state-owned oil refining company ARMO and the Electric Power Distributor Operator OSHEE. Both these privatizations should have been accompanied by important investments in technological innovations to optimize electricity and reduce power losses and increase the quality of the oil produced. In reality both companies did not succeed because privatization was not accompanied by other investments and the government was forced to nationalize them again.

Dep. Var: ln(productivity)	Panel GLS (heteroskedastic panels)	Panel Fixed Effects (robust standard errors)	Panel GLS (heteroskedastic panels)	Panel Fixed Effects (robust standard errors)	Panel GLS (heteroskedastic panels)	Panel Fixed Effects (robust standard errors)
Country fixed effects	yes (dummies)	Yes	Yes (dummies)	yes	yes (dummies)	yes
Observations (groups)	175(8)	175(8)	180(8)	180(8)	175(8)	175(8)
Wald chi-2 (Prob > chi2)	23845 (0.000)		16682 (0.000)		24106 (0.000)	
R-squared		0.99		0.98		0.99
F (prob>F)		1635 (0.000)		748 (0.000)		1486 (0.000)

*: 10%, **: 5%, ***: 1%
N.B: all the variables are log transformed, for this reason the coefficients can be interpreted like this: "if we change x by one percent, we'd expect y to change by β percent"

Table 2. The impact of FDI and GFCF on productivity by countries

Dep. Var: ln(productivity)	Panel GLS (heteroskedastic panels) Albania, Bosnia, Macedonia, Slovenia	Panel Fixed Effects (robust standard errors) Albania, Bosnia, Macedonia, Slovenia	Panel GLS (heteroskedastic panels) Bulgaria, Croatia, Romania, Serbia	Panel Fixed Effects (robust standard errors) Bulgaria, Croatia, Romania, Serbia
ln(FDI)	0.004	0.006	0.010**	0.015***
ln(Productivity) (t-1)	0.93***	0.91***	0.94***	0.95***
Constant	0.72***	0.86**	0.56***	0.57***
Country fixed effects	Yes (dummies)	Yes	Yes (dummies)	Yes
Observations (groups)	86(4)	86(4)	89(4)	89(4)
Wald chi-2 (Prob > chi2)	23289 (0.000)		7804 (0.000)	
R-squared		0.99		0.98
F (prob>F)		1113 (0.000)		1517 (0.000)

*: 10%, **: 5%, ***: 1%. N.B: all the variables are log transformed, for this reason the coefficients can be interpreted like this: "if we change x by one percent, we'd expect y to change by β percent"

Table 3: The impact of FDI on the tertiary enrollment

Dep. Var: In tertiary enrollment)	Panel GLS (heteroskedastic panels)	Panel GLS (heteroskedastic panels) Albania, Bosnia, Macedonia, Slovenia	Panel GLS (heteroskedastic panels) Bulgaria, Croatia, Romania, Serbia
ln(FDI)(t-2)	0.010**	0.008	0.012**
ln(Enrollment) (t-1)	0.94***	0.93***	0.89***
Constant	-0.03	-0.03	-0.03
Country fixed effects	Yes (dummies)	Yes (dummies)	Yes (dummies)
Observations (groups)	133(8)	58(4)	75(4)
Wald chi-2 (Prob > chi2)	9293 (0.000)	5667 (0.000)	3008 (0.000)

*: 10%, **: 5%, ***: 1%. N.B: seeing that enrollment is I (1), and FDI I (0), we use VAR again

Looking at the table, we can say that even in this case we see that FDI correlation with university enrollment is positive only in those countries where total investments are correlated with productivity and FDI complements investments. In general, regarding FDI and university enrollment, we can say that FDI conveys new technology that requires qualified human capital, so there will be an increase in demand for qualified workers (Subbarao & Srinivas, 2009; Noorbaksh et al Narula & Marin, 2003). An increased demand for qualified workers inevitably means higher future salaries for them.

This increased demand for qualified workers encourages young people to enroll in universities in the future. This decision is taken at least 1 or 2 years ahead, so the effects are felt after a two-year delay.

Table 4: The impact of FDI on Unemployment

Dep. Var: ln(unemployment)	Panel GLS (heteroskedastic panels)	Panel GLS (heteroskedastic panels) Albania, Bosnia, Macedonia, Slovenia	Panel GLS (heteroskedastic panels) Bulgaria, Croatia, Romania, Serbia
ln(FDI)	-0.002	0.001	-0.006
Constant	-1.00***	-1.00***	-0.07***
Country fixed effects	Yes (dummies)	Yes (dummies)	yes (dummies)
Observations (groups)	178(8)	87(4)	91(4)
Wald chi-2 (Prob > chi2)	7118 (0.000)	2283 (0.000)	3859 (0.000)

N.B: Unemployment and FDI I(0): panel in levels

Unemployment is the dependent variable in the last table. The results show that FDI do not have a positive impact on the reduction of unemployment.

In this case, unlike the analyses conducted in the preceding models, we do not provide fixed effects and GLS because in essence there are no significant results. We also tried to use employment rate instead of the unemployment index but the results remained the same.

These results are not very surprising since FDI in the Balkan countries in the majority of cases went towards the privatization of state-owned enterprises and usually enterprises undergo restructuring and reorganization of their human resources during privatization resulting in job cuts (Estrin & Uvalic, 2013). These cuts are due to the fact that state-owned enterprises hire workers way in excess of their productive needs. Also some productive processes are automated, in addition to this the foreign investors appoint their own managers. Besides, when foreign investors come, it is often the case that even those who were demotivated and were not looking for a job start looking for a job again and consequently are regarded as unemployed unlike previously when they were not considered as such.

5. Conclusions

In this paper we have examined the impact of foreign direct investment in the Balkan countries on the argument that foreign direct investment is essential for the reconstruction and economic development of the host countries.

We have examined the effects of FDI using three different models. The first model analyses the impact of FDI on the productivity in the Balkan countries. The second model dealt with the effect of FDI on university enrollment, whereas the last model tried to verify the effects of FDI on unemployment.

The empirical analysis showed that the positive effects of FDI on productivity are such only when there is a strong correlation between FDI and GFCF, i.e., only when FDI is real investment and complements total investments, turning thus into an important source of productivity growth in the host countries. All this highlights the institutional aspect in selecting and favoring FDI that complements total investment. FDI are positively correlated with productivity. On the other hand, when we consider both FDI and investments, productivity is correlated positively only with investments in general and not with FDI. This result suggests that investment is the main factor leading to increased productivity and that FDI are influential when they complement investment.

Moreover, this study shows that FDI does not have a positive effect on reducing unemployment, quite likely because FDI in the respective region is related to the privatization process and consequently foreign investors carry out a restructuring and reorganization of domestic firms.

Thus, the empirical analysis confirms what the majority of the literature on FDI says, that foreign investments generally have positive externalities in the country. Also, the empirical analysis confirmed that countries with qualified human capital attract FDI

and in turn it encourages young people to get a quality education at the same time.
An interesting result of this paper is that foreign direct investments stimulate productivity growth in countries before they become part of the European Union. Once they are part of the EU their impact seems to fade away in some cases. This result highlights the need to understand the role of institutions in the impact of FDI in the host countries.

This paper contributes to the debate on the effects of FDI on the economic growth and development of the host country, with Balkan countries as the focal point.

Thus, our paper serves a dual purpose. First, it studies the impact of FDI through the analysis of macroeconomic data. Hence it differs from other studies that measure the impact of FDI at the enterprise level, or country level, however, limited to a small number of countries, being unable to extrapolate its effects on different countries, distinguishing between those who are part of the EU as well as those who aspire to become part of the EU. This is to explain the different ways in which FDI impacts countries with different economic and institutional structure, i.e., to know (understand) whether the effects of FDI are different in countries with different economies and in different stages of integration.

Finally, this paper seeks to provide a correlation between FDI and the long-term economic development of a host country by assessing the impact of FDI on university enrollment and employment. Education is considered to be the key to a country's economic growth in various theoretical and empirical studies. The political implication of this article is: providing incentives to attract only foreign direct investments that complement total investments can increase the productivity of the host country and help its economy to grow as a whole.

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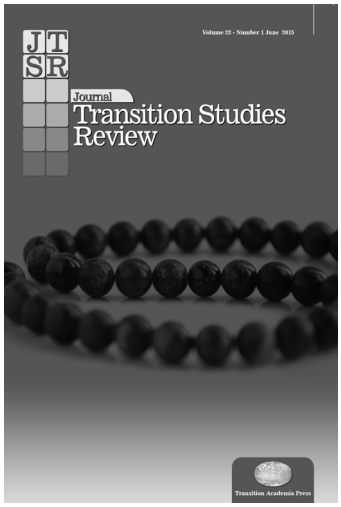

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Transition Studies Research Network was founded in 2002 as CEEUN-Central Eastern European University Cooperation, with the aim to connect a group of experts and university faculty in a program of cooperation devoted to research programs and specialized international postgraduate and doctoral courses. The Network has grown fast and soon after the scientific "voice" was established with the Journal Transition Studies Review, published initially by the CEEUN, then by Egea - Bocconi University Press, and finally by Springer Wien-New York.

At the beginning, JTSR was focusing on transition in Central and Southeast Europe, interpreting CEEUN purely as a European network. Soon afterwards, the EU enlargement was achieved extending the aims and scope to differentiated forms of partnership with Russia, Ukraine, Caucasus, the Black Sea and Caspian Seas, Mediterranean regions and Near East. Today this approach has dramatically changed following a serious violation of the international laws and agreements by the Russian backed insurgency and later invasion of Crimea and Eastern Ukraine. Today we are facing the most severe crisis of security and confidence between European Union countries and Russia since the Second World War and the reunification of Germany. The future is unpredictable and certainly nothing will return to be as before in the relations with Russia.

CEEUN was launched in Vienna and its first meeting took place at the Institution that was founded by Friedrich August von Hayek and Ludwig von Mises, two great thinkers and economists: the Austrian Institute for Economic Research. Now the scenario is

completely different. From 2005 on, a worldwide regional approach looking to Asia, Latin America, Eurasia and Great Middle East has been implemented. TSN-Transition Studies Research Network has inherited from the previous CEEUN the "aims and scope" which were recently integrated. In the last ten years Transition Studies Research Network has progressively involved more than 400 internationally well known members and 95 university departments, institutes and research centers and is engaged in many areas and programs.

The scientific interests and fields covered are: Europe and the World, future approach to EU enlargement, global governance economic, financial and policy framework and impact, where the focus would be mainly on growth theories, innovation and human capital, cultural and intellectual heritage, main advanced industrial sectors technologies, investments, international affairs, foreign policy choices and security, monetary policy and main currency areas, banking and insurance, development and area studies, social policies, environment and climate, culture and society, juridical and law studies, regional approach to global governance, peculiarities and critical challenges.

The future transition to an open economy and institutional reforms, political and strategic issues and challenges, governance, European, Mediterranean, Asia-Pacific, Middle Eastern, Latin America and Africa perspectives are key topics of this high ranking journal.

Transatlantic and Asia-Pacific relations, security and international order represent, together with applied regional studies, another cornerstone of the Network's activity and of Transition Studies Review's contents as well as of three other Journals covering specific aspects and regions: the Journal of Global Policy and Governance; the Journal of East Asia in World Affairs, in cooperation with Asian universities and the Journal of Welfare Policy and Management at Udine University. The Network is deeply committed to a wide range of transition issues related to quantitative modeling and tools to analyzing and researching economic, financial, strategic studies, social, cultural, environmental, juridical main issues.

Bodies and Organs

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Publications

JTSR - *Journal Transition Studies Review - Transition Studies Research Network, Venice, Italy*

JGPG - *Journal Global Policy and Governance - Transition Studies Research Network, Venice, Italy*