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The principal tenet of *Ekonomika Preduzeća* is to promote actual topics that spin the economic development wheel from microeconomic angle. Our intention is to offer our readers a practical view of the overall context from different perspectives and provide insights, knowledge, and academic wisdom that may potentially contribute to the resolution of the main fault lines and their consequences. In that spirit we are starting to present a paradigm shift in the field of economic policy and rejuvenation of the old concept of industrial policy as a common sense institutional choice for economic development.

As usual, this edition of *Ekonomika Preduzeća* covers different topics divided into five sections. Introductory paper written by *I. Vuksanović* and myself is a pioneering work on the full conceptualization of a new platform for economic policy in Serbia based on industrial policy. After numerous failures of the economic policy makers to vanquish the quarter-century crisis and embark the economy on the road to sustainable employment, we presented the standpoints of the world's leading economists and offered a comprehensive solution for the profound and overwhelming bleakness.

In *Organization and Management* section, the first paper written by *S. Aćimović* and *V. Mijušković* explains the significance and value capacity of green supply chain in the plight of universal global transformative change. The authors introduce the most important strategic activities of the green supply chain management and demonstrate its potentials and key challenges based on the experience of Indian IT sector.

In the following paper in this section, *N. Vignjević-Đorđević* describes the current situation and trends in corporate governance practice in the SEE region from the regulatory perspective. The author points to the areas where there is an obvious necessity for alignment between the legislation and the needs and requirements of both financial market and companies.

In *Tax and Law* section, *J. Perović* and *Lj. Tomić* explore truly sensitive issue of director's liability to the company considering potential damage he/she may cause to it. Given that even in the countries with respectable jurisdictional history some controversies in this field still exist, the authors made an effort to analyze the rules in Serbian jurisdiction, based on the last Company Law as well as the other relevant laws and regulations.

In the section entitled *Information technology J. Lukić*, a doctoral student, presented the results of her research performed on Serbia's ICT sector. The results undoubtedly indicate that the big data concept becomes increasingly important among industry players engaged in open innovation practices, for the purpose of increasing both efficiency and competitiveness.

In the last section covering *Marketing* topics, *Lj. Stanković* and *J. Končar* explore the effects of rising power of retailers on consumer position in marketing channels. Based on the analysis of the consumers' attitudes and opinions, the authors show that the development of big retail chains resulted in rising satisfaction of consumers in Serbia. Possible abuses of dominant position and the role of the state intervention in preventing such behavior are also discussed.

The last paper in the same section written by *I. Kovačević*, *B. Zečević* and *S. Veljković* deals with an interesting and actual topic of "gamification" in the destination marketing, specifically, and destination management, in general. Based on Serbia Convention Bureau case study, the authors demonstrate perceived importance of "gamification" in destination management as well as positive ROI for its users.

Prof. Dragan Đuričin, Editor in Chief

Roundtable with the Prime Minister of the Republic of Serbia

On July 25, the Presidency of the Serbian Association of Economists (SAE) was pleased to welcome Mr. Aleksandar Vucic, Prime Minister of the Republic of Serbia and Prof. Dusan Vujovic, Minister of Economy and Acting Finance Minister. The topic of the meeting attended by the representatives of the Government and members of the Presidency was the Serbian Government's reform agenda. The representatives of the Government expressed great interest in recommendations and initiatives of the economics profession.

At the press conference held after the meeting, Acting Finance Minister Prof. Dusan Vujovic announced the adoption of a revised budget that would provide sufficient funds for the implementation of structural measures, such as funds for social programs, and a continuation of the policy aimed at encouraging business activity and attracting investment through various incentive programs. The reform agenda presented at this meeting indicates that envisaged reforms are much broader in scope relative to the previous period, encompassing not only spending cuts and fiscal consolidation in a narrow sense, but rather a broad consolidation that will also take into account opportunities on the revenue side of the budget and cost reduction in the public sector. The Government projects that in the years ahead most of the budgetary savings will be achieved through cost-cutting measures in state-owned enterprises, more efficient billing and collection practices in the public sector, and the fight against the shadow economy.

Besides, the representatives of the Government announced the adoption of a set of reform laws, including the laws on privatization and bankruptcy. This year will be marked by stagnation or even a slowdown in economic growth due to substantial damages caused by floods, but it is expected that the Government's measures will lead to a significant increase in GDP in the coming years.

Mr. Aleksandar Vlahovic, the President of the Serbian Association of Economists, said that the Government's reform agenda coincided closely with the long-term macroeconomic stability measures that the SAE has advocated for years. Since the onset of the crisis, economists have underscored the need for an urgent reform of the public sector and structural reforms which lay the basis for achieving long-term and sustainable macroeconomic position. All these years they have prompted the governments to immediately undertake fiscal consolidation, complete the restructuring of state-owned enterprises, initiate the pension system reform, enact a new labor law, and improve business environment.

The President of the SAE also stressed the necessity of establishing a broader social consensus, which calls for greater responsibility of all participants in the economy and public life. Given that the implementation of serious reforms requires collective action, the roundtable with the Prime Minister and representatives of the Government was only the first in a series of meetings that will be dedicated to the ways of dealing with pressing economic issues. The SAE will mobilize all its resources to assist the Government in implementing necessary economic reforms.

Roundtable with the Delegation of the National Bank of Serbia

On September 3, the Presidency of the Serbian Association of Economists (SAE) hosted the delegation of the National Bank of Serbia, led by Governor Jorgovanka Tabakovic. Speaking at the press conference that took place after the meeting of the Governor and her associates with the representatives of the SAE, Dr. Tabakovic said that the main topics of the discussion had included the issues such as unemployment, debt, and inflation. It was agreed that the coordination between fiscal and monetary policy, with clearly defined responsibilities, is essential for the financial system stability. The Governor of the NBS pointed out that the decline in bank lending activities was mainly a consequence of a lack of demand, or the inability of companies to make long-term purchasing and production plans. Therefore, the NBS will continue to perform its most important task, i.e. to preserve price and financial system stability, which makes the greatest contribution to financial consolidation, employment growth, stabilization and sustainability of public debt.

According to Mr. Aleksandar Vlahovic, the President of the SAE, the financial system is liquid but the problem is how to redirect those funds toward the business sector. Fiscal consolidation and structural reforms will help the Serbian economy to enhance its competitiveness. The President of the SAE agreed with the representatives of the NBS that the main objective should be to achieve and maintain price stability, banking system stability, as well as the stability of the financial system as a whole. A potential shift in monetary policy may be considered once the effects of fiscal consolidation become visible and structural reforms are clearly timed and well established.

The president of the SAE conveyed that exchange rate fluctuations had not been discussed at the meeting, but that the representatives of banks had drawn attention to the problem of bad debts. The Governor emphasized the NBS would, in the most effective way, continue to maintain the stability of the exchange rate of the dinar, as an important factor of price stability. The NBS is closely monitoring external events that may cause foreign exchange rate movements, but also the moves of local participants in the foreign exchange market because some of them tend to engage in speculative activities in order to profit from changes in the exchange rate of the dinar against the euro.

Bearing in mind the importance of active communication with the government, ministries, regulatory bodies, and other relevant state institutions, but also the enthusiasm of its members for taking an active role in Serbia's economic recovery, in the upcoming period the SAE will intensify its activities relating to the organization of such meetings.

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QUEST FOR NEW DEVELOPMENT MODEL AND ECONOMIC POLICY PLATFORM FOR SERBIA: THE ROLE OF INDUSTRIAL POLICY*

U potrazi za novim modelom razvoja i platformom za vođenje ekonomskih politika u Srbiji - uloga industrijske politike

Abstract

The devastating truth that after twenty-five years of transition Serbia's economy is still impotent and out of tune opens the question: Why do people continuously act against their own interest? The answer is: the wrong system.

Serbia's economy is packed with structural imbalances. Among them, the most important one is discharmony between the real economy and financial sector due to wrong transition strategy and ineffective macro management, both blindly following neo-liberal doctrine. Deindustrialization along with financialization is the main contradiction of the system. As a consequence, Serbia has experienced output gap, competitiveness freefall, and high unemployment.

By financialization we mean the increase in the influence of financial markets, institutions, and elites over both the economy and the government. Now the key challenge for Serbia is to compare neo-liberal policy platform with new conceptually complex one, which is capable of restoring the dynamic balance between the real economy and financial sector and embarking the economy on the road to sustainable employment. Doing so will take courage on the part of policy makers defining both economic policies (monetary and fiscal) and industrial policies. "Smart" industrial policies are at the center of the rejuvenated wisdom known as the new structural economics. The economic system following the new doctrine is known as managed capitalism. It is conceptually different from free-market capitalism following neo-liberal doctrine and state capitalism following conventional structural economics.

Most theories of growth and related economic policy platforms were developed at the macroeconomic level. Such perspective is good for spotting relation between stability and growth. That got us thinking: What institutional choices are supporting that relationship? Prior to the Great Recession, the answer was coming from monetary policy generally and inflation targeting policy tool specifically. But, universal efficiency of the market is not common in cases of major macroeconomic distortions like output gap, deflation, and demand-pull inflation. In such situations market forces unleashed recession, instead of booming prospects. Anti-crisis measures based on the same doctrine led to jobless recovery scenario, at best. Frequent crises confirm that some fundamental assumptions of conventional economic doctrine and related economic policy platform must be revisited.

This article is a continuation of our last two contributions in the field of transition and related issues in Serbia [5] and [6]. It is an attempt to create the model of growth and policy platform in an impotent and out of tune economy from the ground up. Namely, by looking at the context primarily from microeconomic (or business) perspective and following revisited conceptual economic policy platform based on active role of government. It is reasonable because in post-crisis period the relevance of industrial policy as a common sense institutional choice and the government's lever is acknowledged by mainstream economists and politicians from all sides of ideological spectrum.

There are some questions triggered by this turnaround. What is the rationale for revising market efficiency as fundamental assumption of economic orthodoxy and acknowledgement of active role of government in an economy? What are the key factors that have raised so much controversies about industrial policy *per se* and how to fix them up in renewed (let's say "smart") industrial policy framework? How can "smart" industrial policies be designed to avoid past failures as well as to emulate the past benefits? How to balance core economic policies (monetary and fiscal) with "smart" industrial policies in the new (let's say "heterodox") economic policy approach in the case of Serbia. What is the remaining policy agenda? This article intends to address these questions. The aim

* This paper is part of the research on the project financed by the Ministry of Education, Science and Technological development entitled "Strategic and tactical measures to overcome real sector competitiveness crisis in Serbia" (No. 179050, period 2011-2014)

is to confirm that in defining anti-crisis measures for late developer in delayed transition industrial policy is a common sense institutional choice with deep theoretical roots and unquestionable practical results.

Key words: *Serbia, industrial policy, orthodox economic policy platform, heterodox economic policy platform, neo-liberal economics, structural economics, technological change, competitiveness*

Sažetak

Poražavajuća činjenica da je posle dvadeset pet godina tranzicije privreda Srbije još uvek nemoćna i raštimovana navodi na pitanje: zašto ljudi neprekidno rade protiv svojih interesa? Odgovor je: pogrešan sistem.

Privreda Srbije je puna strukturnih neravnoteža. Najvažnija neravnoteža je nesklad između realne ekonomije i finansijskog sektora usled pogrešne strategije tranzicije i neuspešnog makromenadžmenta, inspirisanih neoliberalnom ekonomskom doktrinom. Deindustrijalizacija praćena finansijalizacijom predstavlja glavnu kontradikciju sistema. Posledično, javljaju se autput gep, slobodan pad konkurentnosti i visoka nezaposlenost.

Pod finansijalizacijom podrazumevamo rast uticaja finansijskih tržišta, institucija i odgovarajuće elite u odnosu na privredu i državu. Glavni izazov sada predstavlja sučeljavanje neoliberalne platforme za vođenje ekonomske politike sa novom, koncepcijski složenijom platformom koja je u stanju da povrati dinamičku ravnotežu između realne ekonomije i finansijskog sektora i da prebaci ekonomiju na putanju održive zaposlenosti. Da bi se prethodno postiglo, potrebna je odvažnost donosioca odluka pri definisanju makroekonomskih i industrijskih politika. „Pametne" industrijske politike su u centru unapređenog starog koncepta poznatog kao nova strukturna ekonomska teorija. Ekonomski sistem koji sledi novu doktrinu poznat je kao upravljani kapitalizam. U pitanju je konceptualno drugačiji sistem u odnosu na liberalni kapitalizam koji sledi neoliberalnu ekonomsku doktrinu i državni kapitalizam koji sledi doktrinu konvencionalne strukturne ekonomske teorije.

Većina teorija rasta i povezanih platformi vođenja ekonomskih politika stvari posmatraju iz makroekonomske perspektive. Ova perspektiva je dobra za uočavanje odnosa između stabilnosti i rasta. To nas navodi na razmišljanje: koji institucionalni izbor podržava taj odnos? Pre Velike recesije, odgovor je dolazio sa strane monetalne politike, u načelu, i ciljanja inflacije, konkretno. Međutim, univerzalna efikasnost tržišta ne važi u situacijama većih poremećaja kao što su autput gep, deflacija i troškovima gurana inflacija. U takvim situacijama tržišne sile dovode do recesije umesto rasta očekivanja. Antikrizni program koji bazira na toj doktrini u najboljem slučaju dovodi do oporavka praćenog gubitkom radnih mesta. Učestale krize su pokazale da se određene fundamentalne pretpostavke konvencionalne ekonomske doktrine i odgovarajuće platforme za vođenje ekonomske politike moraju promeniti.

Ovaj članak predstavlja kontinuitet u odnosu na naša prethodna dva doprinosa na polju tranzicije i povezanih pitanja u Srbiji [5] i [6]. Članak predstavlja nastojanje da se kreira model rasta i ekonomske politike u nemoćnoj i raštimovanoj privredi posmatrano iz perspektive privrednih subjekata. Naime, posmatrajući kontekst primarno iz mikroekonomske (ili poslovne) perspektive i konsultujući unapređenu platformu za vođenje ekonomskih politika, zasnovanu na aktivnoj ulozi vlade. Za to postoji opravdanje zato što je u postkriznom periodu relevantnost industrijske politike kao legitimnog institucionalnog izbora i poluge vlade prihvaćena od strane najuglednijih ekonomista i političara sa obe strane ideološkog spektra.

Postoje određena pitanja koje je otvorio pomenuti zaokret. Šta je opravdanje za korekciju hipoteze o univerzalnoj efikasnosti tržišta kao fundamentalne pretpostavke ekonomske ortodoksije i priznanje mogućnosti da država može imati aktivnu ulogu u ekonomiji? Šta su ključni razlozi koji su doveli do tolikih kontroverzi u vezi sa industrijskom politikom, *per se* i kako ih eliminisati u izmenjenom (recimo „pametnom") konceptu industrijske politike? Kako formulisati „pametne" industrijske politike na način da se izbegnu pomenute slabosti, kao i da se iskoriste dokazane prednosti? Kako uskladiti ključne makroekonomske politike (monetarna i fiskalna) sa „pametnim" industrijskim politikama u okviru novog (recimo „heterodoksnog") pristupa, i sve to u slučaju Srbije. Koja su ostala važna pitanja vođenja ekonomske politike? Ovaj članak nastoji da odgovori na prethodna pitanja. Namera je da se dokaže da se u definisanju antikriznih mera kod zemalja koje imaju kašnjenje u razvoju i koje su još u tranziciji, industrijska politika predstavlja racionalan institucionalni izbor duboko utemeljen u teoriji i sa nedvosmislenim praktičnim rezultatima.

Ključne reči: *Srbija, industrijska politika, ortodoksna platforma ekonomske politike, heterodoksna platforma ekonomske politike, neoliberalna ekonomska teorija, strukturna ekonomska teorija, tehnološka promena, konkurentnost*

Strategic audit of Serbia's economy

Transition in Serbia started in the early 1990s, at the same time as in other socialist countries from Central and East Europe. It was the period of strong influence of the so-called "universal transformative global discontinuity" (UTGD) as a consequence of complex interaction of global, interdependent, radical, and even contradictory trends. Unfortunately, due to misunderstanding of leading trends in global politics and economy Serbia is currently stuck in transition which prevents convergence effect and catching up with developed economies. In the stage of regression Serbia's exposure to UTGD is constantly growing, which is exacerbating existing fault lines in development model and economic policy platform.

Political leadership remaining perplexed by the implosion of Yugoslavia and increasing impact of UTGD pushed Serbia on the road to freefall. In the modern world it is even more important to whom you are connected than who you are. Being stuck in transition (both geopolitical and economical) in the last 25 years Serbia lost almost

1/3 of output, roughly 1/10 of population, and 1/6 of its territory rich with significant natural resources endowment.

At the beginning of transition, as theory predicted, the economy quickly experienced transition shock but in the case of Serbia it was untypically strong. In 1993 Serbia entered depression. Drop in GDP of 60% was of such magnitude that Serbia has never escaped from transitional recession. Today transitional output gap is nearly 1/3 of GDP from 1989.

There were two transitional waves: the first refers to the period 1990-2001, and the second started in 2001 and is still going on. Transition in vacuum was the main characteristic of the first wave due to economic sanctions. The second wave started with the overthrow of socialist regime, stuck in the middle between an expanding EU and defensive Russia, by democratic regime with the vision of geopolitical repositioning to the EU. Unfortunately, this wave did not contribute to the transition completion primarily due to erroneous transitional tenets, strategy, and macro management.

During the second transition wave the most important transition tenet was development of capital market. This strategy had two levers: lifting barriers to entry for foreign banks and other financial intermediaries, and privatization of the real economy as a vehicle for development of capital market. The most obvious consequence of such an orientation was financialization and over proportional growth of the financial sector. In 2013 the finance and insurance industries accounted for 89% of GDP, up from 37% in 2002. On the other hand, gross value added of this sector was not so significant. In 2002 the gross value added of the finance and insurance industry was equal to 1.6% of GDP compared to the gross value added of all other sectors which accounted for 98.4 %. In 2013 that figure grew to only 3%. In 2002 total value of financial assets was EUR 5.8 billion (36% of GDP). In 2013 it amounted EUR 28.9 billion (90% of GDP). It means that during the second transition wave the financial sector accumulated great power. But, imbalance in power distorts structure of investments in ways that additionally destabilize the economy and expose it to much greater volatility.

The actual return investors of the capital receive is, on average, approaching zero. Today, every attractive opportunity is being eyed by many more investors – and also being pursued by many more companies – than was the case in the past. Competition drives prices of deals so high that the returns to investors are dramatically compromised. For nearly a decade, actual returns on all financial intermediaries backed investments, which were promised to be at least 25%, have totaled up to zero every year. This paradox could be named capital market myopia.

It is peculiar that in the economy with more than EUR 8 billion in savings the market capitalization on the stock exchange is less than EUR 7 billion. The foregoing is a consequence of the fact that the financial system is dominated by what we might call a “migratory capital”. In banking industry 12 month deposits dominate not only external funding, but also internal funding. When invested, migratory capital wants to exit as quickly as possible and to take out as much additional capital as possible before it does. Another important type of capital is risk-averse capital (or “timid capital”). Much of timid capital resides in cash and cash equivalents in privatized companies, where making no investment is better than making investment that might fail. Paradoxically, in a country hungry for growth the least important type of capital is enterprise capital (owners’ equity).

From the perspective of policy measures, there are three main legacies of economic transition in Serbia. Firstly, the policy of soft budget constraints, both on macro and micro level. Secondly, high vulnerability of the system as a result of double macro deficits (current account and budget) financed predominantly through debt release. Temporary sources of financing were privatization proceeds and grants. Thirdly, the expansion of main structural imbalances such as output gap, price disparities, appreciated domestic currency, and double-digit cost of capital.

In such a setting, a risk of downside scenario is high and ever growing. To prevent country from defaulting on its debt, almost every government, at least at the start of its tenure, was faced with near-death experience.

Does Serbia matter? Serbia is a microscopic economy with 0.06% share in global GDP in 2013. It is landlocked country without significant natural resource endowment and with negative demographic trends. In sum, a small, impotent and out of tune economy has no meaningful comparative advantage, nothing that is strong enough to counter the gravitational pull of UTGD.

A belief that Serbia was back on the track appeared in 2013. Some macroeconomic fundamentals were looked pretty good. Surprisingly, the growth of 2.5% happened in the conditions of macroeconomic stability (inflation of 2.2%). But, in the following 2014 statistics show the dual nature of economic reality, the shining upside and dangerous downside. Economy slips into recession as GDP contracted by 1.6% along 3Q 2014. Industrial activity falls by 5.7% yoy in 3Q 2014. Export growth slows down (+2% yoy in 3Q 2014 vs. +26% in 2013), imports quasi stagnating (+1.2% yoy in 3Q 2014), so trade gap falls by 1.6% yoy. Inflation is still low predominantly due to weak domestic demand. Domestic currency depreciated really and nominally, first time after 11 years, mostly as a result of deteriorating trade, strong banks' deleveraging and resurged risk aversion.

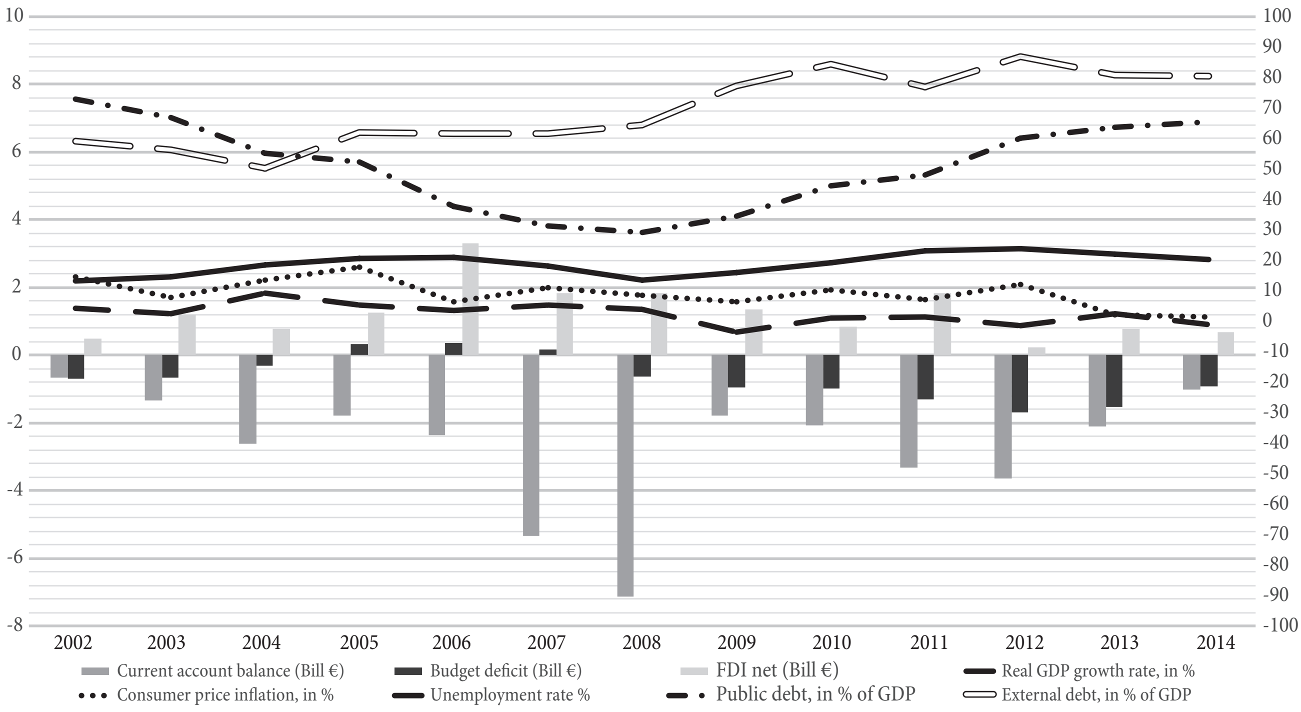
Figure 1 reveals main structural imbalances of Serbia's economy. The profundity of structural imbalances initiated by old fault lines deepened as the global economic crisis intensified. The vulnerability of Serbia's economy is additionally damaged due to interconnectedness among existing imbalances.

The first negative effect refers to high unemployment rate. Dangerously high unemployment has persisted for almost five years now, and it is predominantly a consequence of two unfavorable facts. As can be seen in Figure 1, the level of FDI has tremendously declined since 2011. Aside from the low level of new investments, the vitality of corporate sector is continually being eroded which is obvious from still sizeable current account deficit, and high and rising indebtedness of the corporate sector.

The second negative effect refers to inefficient and unsustainable public sector. Instead of being driving force of growth in terms of providing infrastructure and demand to the corporate sector, the public sector in Serbia is oversized and true burden to the economy. The inefficiency of the public sector is easily observable in its cost structure. The unsustainability of this situation is confirmed by alarmingly high public debt and budget deficit.

The third negative effect stems from the corporate sector's negative profitability and growing indebtedness. There are many factors influencing such conditions. First, unreasonably high cost of capital. Namely, given the level of average interest rate in Serbia (11% in 2013), it is easy to conclude that the majority of companies in the corporate sector cannot cover their costs of financing. Secondly, a long-standing legacy of really appreciated FX.

Figure 1: Macroeconomic indicators for period 2002-2Q 2014



It does not take much more than a cursory glance at Table 1 to realize that Serbia's economy is clearly impotent and out of tune. The main reason for such a situation is the unfortunate fact that economic policy measures have not hit the tenets, while structural policies do not even exist. On the other hand, it is quite demanding to decide where the weakest points lie: in operational performance, financial sustainability of the system, or competitiveness.

Transitional output gap is still wide (28%) since anti-crisis policy measures so far could not move the economy beyond the *status quo*. Inflation was under control in 2Q 2014, but the level of *Okun* index is still worrying (21.6%) due to high unemployment. Twin deficits show a twofold tendency: current account deficit (4.3%) remains within reference limits, while budget deficit (5.1%) continues to be considerably higher than tolerable level. Things would look even more alarming if it did encompass all debts of public enterprises. From a strategic point of view, maybe the most worrisome indicator lies in the youth unemployment which stands at 50%.

Financial perspective is not less gloomy. As of 2Q 2014 public debt is even higher (65.6%). What is upsetting is the fact that this figure will be considerably higher when the costs of floods that struck the country at the end of the second quarter affect the end-year figures. The state sector is not viable. Financial sector has serious problems since the NPL ratio crosses twice its tolerance level (22.8%). Credit rating is still on the speculative brink.

When it comes to competitiveness indicators, things are far from being bright and promising. The exchange rate depreciated slightly, but real appreciation still appears (though low) making no impulse to export growth. Consequently, the export share in GDP (35.3%) stays on the level too low to provide external liquidity.

New government, inspired by convergence effect, announced in the middle of 2014 measures to speed up the accession process to the EU and sweeping reform efforts in order to eliminate macroeconomic imbalances and put the economy on the road to recovery. Accession to the EU was a positive shock for each economy in transition. In the case of Serbia it may turn out to be a negative shock due to output gap and income gap. The departure of all assets prices from fundamentals is visible sign of structural (not cyclical) character of the crisis.

Paradoxically, while Serbia is becoming politically closer to the EU, due to growing vulnerability of the economy it is moving further away from it. Moreover, the EU indulges heavily in the Great Recession. If downward trend in performance persists, the EU is going to be "museum of the world". Convergence effect (export and

Table 1: Vulnerability indicators as of 2Q 2014

Indicators	Value	Reference point	Type of vulnerability
Transitional output gap	28%	0%	OPERATIONAL
Okun index	21.6%	<12%	
Macro deficits			
• Current account	4.3%	<5%	
• Budget	5.1%	<3%	
Dependency index	1.1	>2	
Youth unemployment	50%	<20%	
Indebtedness			FINANCIAL
• Public debt/GDP	65.6%	<45%	
• Foreign debt/GDP	80%	<90%	
• Foreign debt/Export	173%	<220%	
NPL ratio	22.8%	<10%	
Credit rating			
• S&P	BB-/negative	investment ranking > BB	
• Fitch	B+	investment ranking > BB	
Export (goods)/GDP	35.3%	>50%	COMPETITIVE
Currency change (1H 2014/1H 2013)			
• Nominal depreciation	3.2%	<5%	
• Real depreciation	1.6%	<0%	
Global competitiveness index	94th of 144	65-SEE average	
Corruption perception index	72nd of 177	59-SEE average	
Ease of doing business	91st of 189	60-SEE average	
Economic freedom index	95th of 178	62-SEE average	

FDI) is limited when economy with sluggish performance and high vulnerability integrates with the economic system with weakening economic activity.

As a result, the major challenges for Serbia are coming not only from economic but also from geopolitical perspective. To survive, Serbia must return to itself. The key question is: How to bring the economy from import and debt dependent to balanced one? A quest for solution must start with rethinking conventional development model and related economic policy platform.

Rethinking conventional wisdom in theory and policy

Before the Great Recession there was strong dissonance between economists from developed and developing countries regarding the dilemma which institutional arrangement primarily influenced development model and economic policy platform. Early developers (industrialized or developed economies) preferred free market, while late developers or developing economies opted for government intervention based on industrial policy [35].

The Great Recession was a signal that the model of liberal capitalism was broken. Anti-crisis measures confirmed that the government' intervention providing lifelines to some industries and companies was a way of escaping collapse, even in developed economies with high income and well-functioning capital market. Crisis resolution requires proactive government instead of passive one choosing wait-and-see behavior against what the market forces dictate [21]. It means the rejuvenation of industrial policy as a common sense institutional choice.

The key presumption of liberal capitalism is that market is efficient. As a consequence, there is no need for government to intervene in allocation of resources (including the preferred methods of allocation) and distributional issues. According to that doctrine, government is not welcome to improve situation despite imperfections, asymmetric information, and risks. Moreover, the government is not welcome even when market prices do not reflect most general policy tenets like equal opportunities, technology-driven competitiveness improvement, and pollution control. So, inefficient market equilibrium presents quite a strong argument why profit maximizing behavior on micro level does not lead to sustainable employment on macro level.

Influence of free-market doctrine on policy makers was strongly exacerbated in the 1980s by activism of leading politicians like the U.S. president *R. Regan* and the U.K. prime minister *M. Thatcher*. The new gospel in the renewed wisdom became the faith in rationality (rational expectations theory) in free-market environment. International financial institution IMF/WB in accordance with the U.S. ministry of finance summarized neoliberal doctrine in the so-called *Washington Consensus* policy platform. It was a lever enabling spillover of doctrine from developed economies to the rest of the world. As a consequence, the neo-liberal doctrine became the "official" blueprint for structural reforms among late developers (developing economies as well as economies in transition).

Washington Consensus followed three basic principles: deregulation, liberalization, and privatization. In this policy platform inflation targeting plays a role of key policy tool focusing on consumer price inflation (low and stable) as prerequisite for macroeconomic stability and sustainable employment. In such setting an economy grows through creative destruction, with newcomers bringing innovations that destroyed old incumbents. The role of the government is to leave the private sector to take a risk.

There are some problems with the previous view, notably regarding its applicability in economies with a delay in economic development and low level of income [1]. Late developers have not grown rapidly from poverty to riches, in part, because they do not have institutional setting capable of creating competitive companies quickly and, in turn, do not have enough competitive companies with competencies to take advantages of such setting. As a consequence, economists from late developers in transition with greater sensibility for real economic problems overplay the role of government in growth. In sum, the extent of the government intervention in the economy is demarcation line between early developers and late developers. Also, in transition process, institutional change implemented by the government, does not inhibit but rather accompanies the growth. As a result, the main challenge for late developers in transition is to create enough competitive companies. Minimum density of relevant economic agents is a prerequisite for multiplicative effect of new investments and sustainable growth.

In the early stage of development the government intervention in an economy has two options: creation of state-owned companies to undertake business activities and creation of space for favored privately-owned companies to grow relatively unimpeded by competition. In both options domestic savings are directed through a largely captive financial system towards favorable companies. Government usually protects domestic market from imports by using measures like tariffs, import restrictions, local currency depreciation, etc. Need to create strong globally competitive companies usually leads the government to favor the connected producer and its financiers at the expense of citizens (low wages, low interest rate on deposits, taxing households more, etc.). Under these circumstances, consumption is strongly constrained. It is the price for expansion of tradable sectors, investment growth, job creation, and sustainable employment. Surplus in current account is a prerequisite for strategically relevant investment in competitiveness improvement.

In the later stage of development a government with continuity in implementation of industrial policy has tried to remedy privately-owned companies' competitiveness gaps and build champions, even when relaying on market signals in resource allocation. Emerging system in which government gives some level of support along with conventional privileges to favored national champions effectuated many times in superior performance and competitive advantage on global level. *R. Rajan* [28, p. 56] labeled this emerging system "managed capitalism".

According to *J. Stiglitz* [32, p. 344], *Washington Consensus* was strongly opposed to any government intervention to block entry including the sectors with comparative advantage. There are some problems with government intervention, notably institutional overhang, indebtedness, rent-seeking mindset, and corruption. Emphatic *laissez-faire* attitude in neoliberal doctrine goes too far again. It was regularly marked as a *panacea* for the serious shortcomings connected with government inward-looking industrial policies.

There are some positive examples of implementation of that doctrine in economies in transition. Slovakia is, probably, the best one. But, some economies in transition, like Serbia, following neo-liberal doctrine mechanically saw not only competitiveness demise but also widened old structural imbalances [5].

Industrial policy is not a new concept. It has been on the stage with alterable fame for more than sixty years as a proxy for development and policy based on government active role in the economy through exploitation of comparative advantage, and creation and exploitation of competitive advantage. In general, related development model can be seen as a result of synergies between enhanced human capital and new knowledge, involving complementary investments in physical and human capital [15, p. 174].

The government activism in the economy has raised so much controversies and open issues among mainstream economists. It was celebrated by economists from developing countries and advocated from cautious economists from developed world. Economists from developing countries were concentrated on explanation of the necessity for industrial policy as a lever for convergence and catch up [29]. Implementation of neo-liberal doctrine for late developers is connected with some limitations due to shortage of private entrepreneurs, lack of financial capital, undeveloped capital market, high risk aversion of local investors, and fear from foreigners. In contrast, economists from the early developers blamed industrial policies for stagnation or even deterioration of income gap, ignoring the fact that most problems for late developers came from inadequate policy platform and macro management. On the other hand, some late developers (South Korea, China, and Malaysia, for example) did not subscribe to neo-liberal doctrine, yet they realized unprecedented growth thanks to proactive government industrial policy measures. The previous facts open the door to the reevaluation of neo-liberal doctrine, both by economists and politicians.

Key consequence of neo-liberal doctrine is financialization or dominance of financial services over the real economy. According to *G. Mukunda* [23, p. 74], financialization is an increase in the influence of financial markets, institutions, and corresponding elites over the economy and other institutions of society, including the government.

In highly financialized economy, "the financial tail is wagging the economic dog". This structural change has influenced not only relative position of sectors but also core economic policies. For example, monetary policy of strong domestic currency benefited financial services, instead of choosing depreciated FX rate which might have spurred manufacturing.

Financialization is a global phenomenon. Thanks to the securitization before the crisis and quantitative easing in post-crisis period, global economy has entered the new environment of "capital superabundance". Namely, the global economy is awash in capital. Total financial assets are almost 10 times the value of the global output of all goods and services, and the development of financial sectors in emerging economies will cause global capital to grow another 50% by 2020 [4, p. 64].

Developed financial system is crucial to the sustainable growth in early and intermediate stages of economic development. When credits to private sector reach 80-100% of GDP, finance sector becomes too large. Further expansion is counterproductive because it increases macroeconomic volatility and hinders the growth.

There are many ways in which financialization undermines the economy. Firstly, over proportional development of financial sector increases the economy's exposure to the downside scenario. It is a point made by many influential economists like *H. Minsky* [20], *R. Rajan* [28], *Ch. Kindleberger* [11], and *P. Krugman* [14] during the period of rapid securitization before the Great Recession. Secondly, overdeveloped financial sector easily misallocates resources. A shift from investment in the real assets to equity investment generates high private rewards disproportionate to their social productivity. Pay in the financial sector is a sign of the industry's extraordinary clout. Executives in the finance sector made substantially more than those in other sectors, even when adjusted for their higher level of education. Thirdly, as *O. Orhangazy* [25] brilliantly pointed out, investment in financial assets tends to crowd out investment in real assets because the capital market prefers short-term and liquid investments. As consequence, companies from the real economy face increased pressure to expand returns (dividends and stock buybacks) instead of investing in real assets by using retained earnings. Fourthly, in an economy with supremacy of the financial sector distributive mindset dominates creative one. Rent seeking is dangerous form of distributive mindset, which involves a value creation by manipulating government's policy.

Because financial markets, as a brain of free-market capitalism, are not efficient, today among relevant economists exists consensus that industrial policy is good common sense institutional arrangement [1], [18], [19], [29], [32]. In that context the relevance of so-called "heterodox approach", instead orthodox one, based on the integration of core economic policies (monetary and fiscal) with industrial policies is acknowledged by mainstream economists from different sides of ideological spectrum as well as leading politicians. The rejuvenation of industrial policy in theory and practice could also be observed by the fact that *McKinsey*, trendsetter in the consulting industry, in last couple of years constantly advises governments all over the world about how industrial policies can help to crisis resolution, competitiveness improvement, balanced growth, and sustainable employment.

In the EU the new approach is bringing together all types of industrial policies. Priority sectors are identified by following criteria of comparative and competitive advantage in agri-food, energy, chemicals, motor vehicles, transport equipment, etc. In the new context 36 technology platforms provide institutional hub for technology-driven competitiveness improvement in existing sectors and emerging ones.

In post-crisis global world there is major rethinking of conventional economic wisdom. Economic success of countries that did not follow neo-liberal doctrine and policy platform and their growing importance in the global economy (primarily, BRICS and "next 11") inspired rethinking that core macroeconomic policies (monetary and fiscal) and industrial policies are unavoidable parts of the comprehensive economic policy platform. In search for solution pendulum could not be shifted from one extreme institutional arrangement to another one, from the proposition that market is the best regulator to the proposition that the government is the only master. Definitely, development model and economic policy platform based on integration of core economic policies (monetary and fiscal, primarily) and industrial policies, is a field in which there have been major breakthroughs [2].

Validation of the previous facts raises some hope that not only privately-owned companies, but also state-owned companies from priority sectors under "smart" industrial policy could be profitable, could reinvest their proceeds effectively, close the competitiveness gap (both resource gap and technological gap) with global leaders and, by doing so, enable sustainable employment.

"Smart" industrial policies have been used to correct market failures as well as previous government failures. They are not just about manufacturing. Support to technological change and support of infant industries (export expansion and substitution of import) are critical tenets also in agri-food and service industries (ICT, finance and health). Competitive exchange rate policy, education policy and infrastructure development are typical examples of sector neutral (or horizontal) policy. But, these policies are mistakenly presented as "neutral" even though related decisions always involve some value judgment. As *J. Stiglitz*, most cited thinker from the field, pointed out "the question is not whether any government should engage in industrial policies, but how to do it right" [33, p. 9].

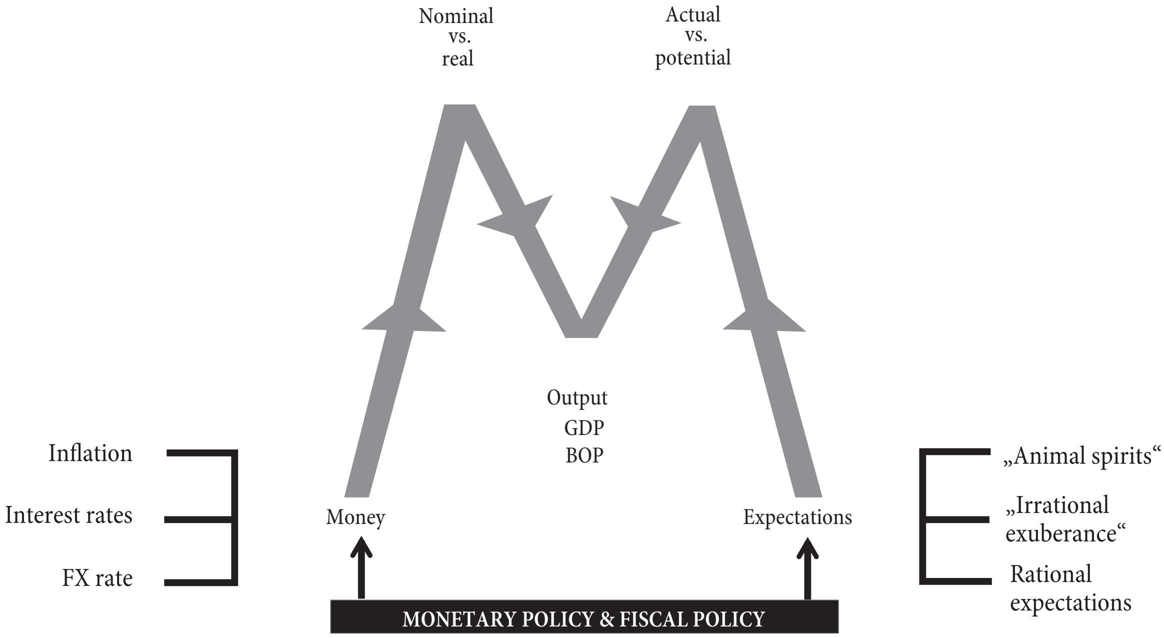
Before we thoroughly elaborate "smart" industrial policy, let's focus on the key factors that have sparked so much controversy about conventional industrial policy. Usually, critics of industrial policy argued subsidies to some industries, sectors and even companies as a main distortion in shaping the structure of the economy. Indirect subsidies as sector neutral measures regularly involve overvaluation of domestic currency or suppressing interest rate for priority sectors. To reduce the burden of indirect subsidies, government sometimes resorts to administrative measures, granting companies in some industries (high priority infant industries from strategic perspective or important for national security) a monopolistic position and/or introduced price control for basic inputs. By doing this, government is actually introducing further distortions in price structure causing shortages in commodities and foreign exchange or crowding out other companies from debt financing.

Despite increasing convergence in wisdom about industrial policy, there are still some open issues especially regarding the scope, tools, and implementation skills. International agreements have important implications for possible choices. For example, the WTO circumscribes subsidies and trade practices that are qualified as "unfair". Also, institutional setting and competencies of government affect the level of ambition and the choice of tools. Industrial policy often failed due to inadequate strategic audit of economic and political environment, because tenets were inconsistent with the level of development, comparative advantage, environment structure, and core competences. For example, in politically fragile state where rent-seeking mindset exists, the public-private partnership is not easy to be introduced.

Strong division between mainstream economists has expanded during the post-crisis period. For neoliberals free-market solutions continually shape the recovery path. Again, in financialized economy output is below the radar of economic policy. Money and expectations are in focus. But, the output, which is comprised of the goods and services produced in an economy should lie at the center of macro "M" (see Figure 1). The amount of output an economy produces, not large quantity of money and good expectations, primarily determines the level of its viability. Components of output are household consumption, investments, government spending, export, and import. Output constitutes an economy's ultimate budget constraint. A country can use more output than it produces only if it borrows the difference from foreign sources. It means that country is leaving beyond its means. In some cases, it means that country has intention to increase future output, borrowing from abroad in order to raise the level of domestic investment.

Proponents of the new structural economics advise a return to industrial policy as a common sense institutional choice. Implicitly, this orientation creates the space for microeconomic (or business) approach to economic policy formulation. Micro "M" consists of three main components: value, technological change, and organizational culture (see Figure 2). For sustainable employment technological change on microeconomic level plays the same role as output in macroeconomics. This interconnectedness

Figure 3: Macro "M"



Source: [22, p. 135]

is important in late stage of development but also in transition when economy is on the road to restructuring, recovery, and catch-up. Harmonization of measures which stimulate output and technological change is the core tenet of economic policies.

Heterodox or conceptually complex development model along with complementary economic policy platform releases new set of macroeconomic tenets: output gap (low and stable) instead of inflation (low and stable), sustainable employment (instead of flexible labor market), balanced GDP structure with growing role of the real economy (instead of finacialized economy), price parity between all types of assets (including FX rate), and dynamic equilibrium between the real economy and financial services (instead of stability of financial system).

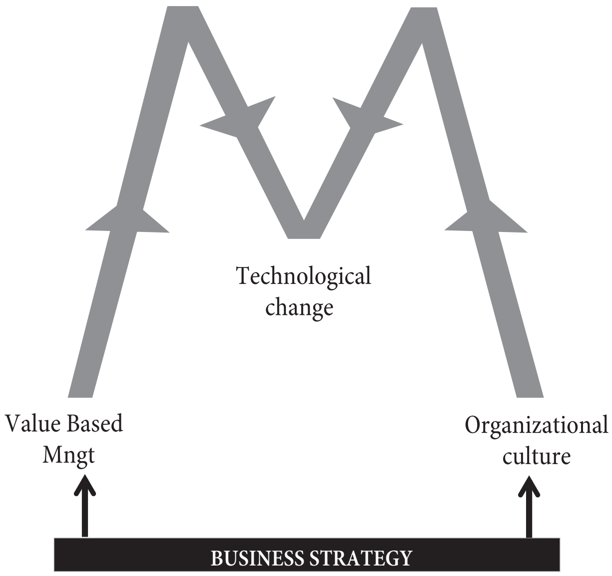
Industrial policy is one of the two components in heterodox model. In the new model the role of the government in tenet setting for priority sectors and in policy coordination is unavoidable.

The effectiveness of industrial policy in achieving selected tenets depends on three essential conditions: (1) favorable macroeconomic environment, (2) consistent usage of policy instruments, and (3) use of state-owned companies as policy anchor [32, p. 327]. Industrial policy instruments depend on whether it focuses on industrial upgrading, propping up declining industries that used to be successful or maintaining social cohesion [32, p. 352]. Regardless of the focus, majority of industrial policies are aimed at strengthening the institutional framework. This is achieved through creating agencies and introducing legislation that makes industrial policy instruments more effective. Institutional coordination is necessary on all three levels: among policy agencies, among private entities, and between public and private sectors [35].

Industrial policy inspired by comparative and competitive advantage

Industrial policy is defined as the government's effort to influence the development of some sectors and industries and, hence, the structure of economy, for the purpose of embarking on the path of sustainable growth, and employment. Industrial policy paragons demonstrate that this institutional choice fortifies sustainable macroeconomic stability and strong growth while simultaneously markedly reducing great distortions of the system like income inequality and gaps in the level of development between different regions [32, p. 340]. Numerous examples testify to the broadness and depth of the government role in the economy (South Korea, Japan, Brazil, China, South Africa, etc.).

Figure 4: Micro "M"



The most important purpose of industrial policy is facilitation of the structural transformation of an economy with delay in development (late developer) and its channeling toward priority sectors. Priority sectors are predominanty those able to transform comparative advantage of nation into tradable goods and services. As a consequence, primary role of industrial policies for late developers and economies in transition is amelioration of the current account sustainability through import substitution and/or export expansion.

For that purpose, some governments have provided support to non-viable companies with high priority for economic development and removed entry barriers only when those companies became sufficiently viable. This is the essence of the conventional structural economics [19]. But, "picking winners" is a risky process. Experience shows that in many instances targeted sectors and industries were not in line with true comparative advantage [3]. When the government fails to achieve global competitiveness in priority sectors, capacity underutilization and high public debt tend to burden whole economy.

According to the new structural economics, two main choices lie ahead of developing countries trying to perform industrial policy as a part of the quest for higher and sustainable growth [19, pp. 162-163]. First, a focus on sectors with tradable goods and services that have been nurturing economic growth (for about 20 years) in countries with similar endowment and of at least twice as high per capita income. The logic that stands behind this reasoning is that late developer has the opportunity to produce these goods and services with lower costs. But, breakthroughs in economic development are not possible by making improvements in already familiar fields but "by traversing empirically infrequent distances" [10, p. 7]. In knowledge-intensive technologically advanced and fast moving industries there is no chance to make a breakthrough from periphery to the core by producing goods and services that are close to those currently produced. It leads to second option for late developer to take considerable strategic risk to jump into non-mature, emerging industries to be able to compete with early developers this time with competitive advantage. The operationalization of the previous idea can be deterred because although internal analysis of the sources of comparative advantage and international benchmarking can result in identification of promising industries, they usually do not produce decisive verdict and experts involved in formulating industrial policy disagree on targeted sectors' prospects.

Plagiarism of the first option hides the danger for the country of falling into "middle income trap". Industrial policy is not only the way to energize the growth, industrialization of the economy and modernization of society, but also an antidote to dragginess in catching up the leaders in competitiveness after late developer reaches middle-income status. Technology and capability failures, rather than market failures, are the main cause of middle-income trap. As a consequence, industrial policy is a way to move from trade-based specialization to technology-based specialization. The strategy to build technological capability in the middle-income countries includes following stages. First, assimilation of state-of-the-art technology through licensing, technology transfer, foreign direct investments, etc. Second, co-development of leading-edge technology through public-private partnership. Third, leap frogging to emerging technologies which involve public-private partnership in research and development [27].

When opting for the second solution, the government has to evaluate the impact of industrial policy on potentially promising industries that have no revealed comparative advantage. According to the product spacing theory, promising sectors are often identifiable through international benchmarking and experimentation. The main challenge of this strategy is how to assign the best fit for government interference and tune industrial policy instrument set in order to maintain sustainable growth rate.

History reveals that late developers usually start their industrialization in the assembly or production segment of the value chain in labor intensive industries.[1] As Figure 5 portrays, the majority of those economies did not manage to move to higher value-added segments of value chain or to shift to higher value-added sectors [26, p. 14].

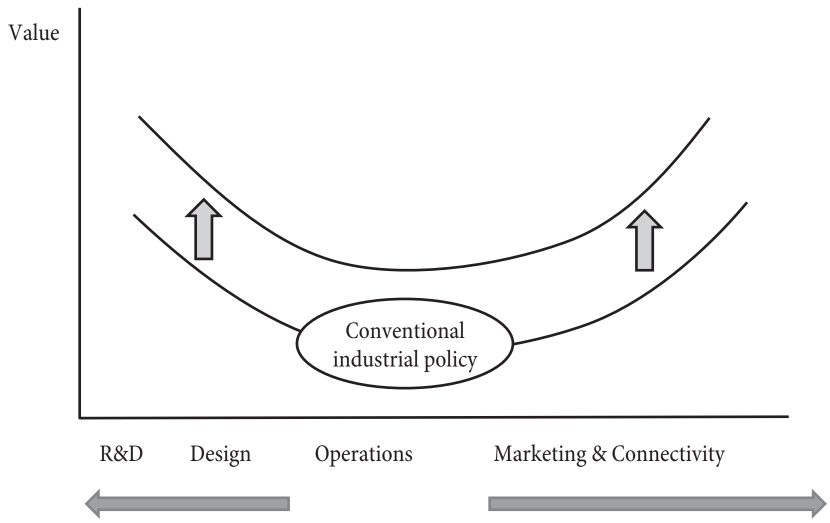
The main reason for this is the fact that policy makers usually neglected the possibility (and necessity) of wide government support in education, R&D, and infrastructure development. Furthermore, some of the countries rushed to promote leading edge sectors in order to approach technology frontier quickly without having required scale economies and skill accumulation first.

Industrial policy based on import of technology for tradable sectors does not lead to sustainable balance of payments. Import of technology and financing of that import influence deficits in both current account and capital account. Development of own technology in sectors reaching technological frontiers leads to surpluses and balance of payment sustainability.

No doubt, for late developers industrial policy can play critical role in creation of competitive advantage through development of strategically important sectors and industries based on complex technologies and IT-driven transformation. The new structural economics tends to emphasize "winners picking themselves" principle through experimentation and positive reinforcement [30]. In the new setting, the government plays the role of responsive and responsible facilitator that channels the economic activity in the way that ensures sustainable employment. A step forward in identifying priority sectors with potential for sustainable growth of the economy is performing international benchmarking based on late comers advantage [10] and [18, pp. 12-16]. As a result, "technological platforms" are the essence of the new approach.

Nowadays there is almost a consensus that industrial policy plays crucial role in shift from current to superior technological trajectory through technological change (technology development, spillover of innovation and product diversification). In free-market economy high-tech industries tend to be imperfectly competitive. For the new technological frontier market forces exist in vacuum. Another problem is character of knowledge, more or less as a public good. It means that marginal cost of next economic agent acquiring the knowledge is zero, excluding transfer costs. Last but not least, market forces are not efficient in public goods spillover. Industrial policy in technology-driven industries help in the creation of

Figure 5: Industrial policy across value chain



Source: [26, p. 14]

1 For example, South Korea started in the 1960s with industrial policy that was aimed at export-oriented industrialization of labor intensive manufacturing sectors such as electronics.

more competitive economy with efficient technological development, higher spillover and lower gap between best practice and average competitors. Previous facts are preconditions for productivity improvement and sustainable growth.

According to *J. Stiglitz* [33, pp. 7-8], industrial policies can have three focuses: (1) on particular sectors (sector specific or vertical industrial policies), (2) on the economy as a whole (non-discriminatory, neutral or horizontal industrial policies), and (3) on future opportunities (e.g. creation of new strategically important industries).

Besides its evident potential, the effectuation of industrial policy depends largely on tenets and measures that must be in harmony with current level of development. Vertical industrial policies are most suitable for late developers. Horizontal industrial policies that provide better conditions for all sectors in the economy come with higher income level. Namely, as the capacity of the private sector improves, the government gains the opportunity to shift to sector-neutral approach which supports overall competitiveness improvement. The last type of industrial policy usually appears as the last stage of government interventionism.

The first wave of industrial policies appeared after WWI, in East and Southeast Asia predominantly. The phenomenon that shifted direction of reasoning was intensification of UTGD in the 1980s, including growing geopolitical spillovers across economy. During the 1990s, industrial policy was firstly relaxed and afterwards practically abandoned due to influence of neo-liberal doctrine and liquidity problem as a result of high public debt. Countries that took into consideration the introduction of industrial policies (both developed and developing) in the aftermath of the Great Recession have to make decisions in completely different fashion. Moreover, due to globalization and hyper competition there is little comfort for late developers from planning in phases. It appears that the economies that wish to go through structural adjustment have to implement industrial policies in coordination with compatible macro management measures and follow lead-edge technologies for priority sectors.

According to *J. Stiglitz* [32, p. 348], structural adjustments depend on three main externalities. First, the coordination externalities in combined institutional choices of market and government interventionism (invisible hand of the market and visible hand of the state). Second, innovation externalities in the creation of technological breakthrough and utilization of its results (spillover of innovation and product diversification). Finally, institutional externalities influenced by the quality of institutional setting.

As far as coordination is concerned, in early stages of development the benefits of visible hand of the government exceed the costs of its actions but it is expected to decline in influence as the rhythm of development starts to accelerate.

Things are different when it comes to innovation externalities. Namely, as the economy grows at higher rates and approaches technological frontier, the role of government as a risk taker in technological development remains critical. Practically, the government stays important player in providing support to technological change until the capacity of private sector improves. Providing institutional support in this area is of paramount importance. This especially refers to regulation, and capacity building of relevant organizations and bodies. Yet, providing institutional substitutes for missing market hides the peril of creating "institutional overhang" [32, p. 349].

Majority of developing countries started with export support at the first stage in industrial policy implementation. Tax subsidies and tariff exemption are uniformly present in virtually all cases of industrial policy implementation. Effectuation of export promotion measures required change in national mindset and preparedness for leveling against global benchmarks. Furthermore, export promotion measures served as a key engine of growth and the principle under which industry portfolio is upgrading, infrastructure is developing, and human resource development pursuing. For example, South Korea adopted an integrated approach to export promotion with comprehensive and interrelated measures, policies and institutions [32, p. 357].

Besides creation of globally competitive companies, full institutional support assumes commensurate regulatory framework. Majority of countries committed to industrial policy quickly enacted laws supporting innovation and regulating intellectual property protection. South Korea has also introduced the Industry Development Law at the very beginning of industrialization in the 1960s. In the

1970s it continued with Industrial Complex Development Promotion Law to provide infrastructure and backward and forward linkages for clusters. National universities located near clusters were called upon and supported to specialize in related fields.

Fostering industrial policy assumes numerous institutional advances. Their main purpose is providing technical support and filling institutional gaps that hinder policy implementation. These include creation of bodies responsible for reindustrialization. For example, in Brazil, National Industrial Development Agency and Council took this role.

Also, providing easier access to finance (lower cost of debt, concessional financing etc.) is of vital importance. Usually, development banks facilitated implementation of industrial policy and coordinated distribution of available funds to priority sectors (the case of Brazil, Japan, South Africa, etc.). In South Korea, National Investment Fund was established to finance long term investment in priority sectors. In cases when the state funds were not providing financing directly, the government used guarantees given to financial institutions that provided credit financing for priority sectors.

Provision of guarantees requires more cautious approach including direct monitoring and meritocratic support. To address previous issue Korean government created short-term export credit system in the 1960s for export insurance.

Many of the measures employed in the first wave of industrial policy are now obsolete due to new regulatory framework that followed accelerated globalization pace. Yet, even today, under non-discriminatory WTO rules, some measures such as public-private consultations, performance-based rewards and integrated policy approach remain valid and effective instruments [32, p. 357].

One response to new limitations refers to private-public partnership. It is the new initiative to secure non-government funding for tradable sectors. For example, in the 1960s Japan and South Korea introduced public-private consultation. They gathered government officials and business representatives trying to identify emerging bottlenecks and constraints that impeded export performance and devise solutions to the problems

Countries that have undertaken industrial policy have devoted considerable time and resources to education and human resource development. For example, Japan declared development of technical manpower and the requisite skills one of its primary tenets. South Korea during the 1970s performed the so-called "scientification of people" through expanded technical and vocational trainings, strengthened science and engineering education, R&D labs and research institutes. The purpose of addressing issues of creation and dissemination of knowledge is solving skill shortage and, by doing this, reaching innovation externalities [32, p. 360].

In sum, to achieve coordination and innovation externalities, three relevant subjects are required: government, business groups, and financial institutions [15, p. 179]. Decisive and resilient government is needed because the promotion of certain sectors and dissemination of knowledge requires the "big push" from the state side. Business groups refer to firms operating in multiple industries, bound together by formal and informal ties. Clusters are the case when constituent firms come from the related industries. Clusters can internalize the returns from innovation to a greater extent compared to isolated companies [32, p. 349]. Financial institutions, including venture capital funds and business angels, play intermediary role in providing capital for industrial policy implementation. On the other hand, excessive financialization of the economy strengthens the position of financial intermediaries, hinders the government's influence on the cost of capital and narrows the available space for investment financing.

Mutual activism of the state and business groups has led to the "big push partnership" [15, p. 182]. The very essence of this partnership is sharing of the business sector investment risks by the government and providing support based on performance measures, while filling the missing links in domestic value chain and moving up the quality ladder at the same time. The scale of government support follows meritocratic rules. Sharing risks assumes deeper involvement of the government in the private sector's decision making. For example, in South Korea, the government was placing caps on investments in the private sector [32, p. 363].

Nowadays, in the wake of accelerated pace of change and rising global interconnectedness, performing international benchmarking as a base for industrial policy development becomes critical. For example, even if the country manages to overcome technology barriers and approach technology frontier, when number of countries build optimal scale capacities for the global market, the world becomes awash in capacity. Hence, the "fallacy of composition" remains one of the key risks of industrial policy [32, p. 352].

Overall, implementation of industrial policy has so far resulted in hits and misses. Experience teaches us that success depends on balance between the structure of global economy and technology development, on the one hand, and country's endowment and capacity of the government to deal with main challenges, on the other.

The capacity of the government depends not only on financial space to perform industrial policy but also on existence of a clear vision about the future and strategy to achieve it. Strategy means flexibility, so the institutional framework created to support economic growth based on industrial policy needs to provide capacity for the economy to improve and adapt in the light of change. Also, industrial policies are given life only when there is doubtless convergence with macroeconomic policy. For example, despites visible results and the fact that thanks to industrial policy in the 1970s macroeconomic fundamentals for majority of today's leading industries were set up, South Korean government had to call off introduced measures during the 1980s due to serious macroeconomic imbalances.

Industrial policy inspired by sustainable competitive advantage

In economic theory, from the very beginning, innovation was treated as exogenous variable, the factor that influences allocation of resources, but which is independent of them. Today prevailing wisdom is that innovation has endogenous character, something which is growing from within the company and, consequently, something which is dependent upon allocated resources.

To survive and to prosper national economy always needs some guiding principles and methods of transferring resources (especially human) from low to high productivity usage, from mature but profitable industries to infant industries with sustainable growth perspectives. Technological change is enabler, it is both opportunity and threat. Market forces by themselves are not capable of providing sustainable growth that enhances technological change (investment in technological development, spillover of innovation, and product diversification). Invisible hand of market could not manage that transformation. Conventional economic wisdom is impotent in addressing phenomena like externalities, coordination, and risk aversion. The question of externalities in innovation development is much more subtle than conventional reasoning about necessity of government support for infant industries in early stages of technological change. As a consequence, in modern economic theory there is emerging consensus about the role of industrial policy in technological change. In short, sustainable growth is a process of continuous technological change evolving throughout technology development, spillover of innovation, and product diversification through industrialization.

In the past fifty years information technology (IT) was playing a leading role in technological change. Namely, IT radically reshaped competition, business model, prevailing strategy of industry leaders, industry structure, portfolio of sectors, and even itself. Before the advent of IT, products were composed of mechanical and electrical parts and activities in the value chain were performed using manual processes and verbal communication. According to [27, pp. 66-67], The first stage of IT (1960-1980), automated standard repetitive activities in the value chain. The emergence of internet unleashed the second stage of IT-driven transformation (1980-2000). This breakthrough enabled coordination and integration across individual activities. This wave allowed global integration of supply chain [27, p. 76].

Unfortunately, the impact of first two waves of IT driven transformation on productivity and growth was pretty disappointing. Supply side explosion thanks to digitalization had deflation effect and did not contribute strongly to GDP growth. Shift toward unproductive but profitable areas (games are emphatic example), also, produced some challenging macroeconomic impacts. Paradoxically, in the meantime growth of output and productivity were higher in IT neutral industries. On the other hand, IT industry was the main driver of income inequality ("winner takes it all" effects). Last but not least, although the value chain in real economy was transformed, products themselves were diversified marginally in terms of functionality and performance (or consumer's perceived value) which inhibits industrialization.

After the experience with previous two stages of IT-driven transformation, there is general recognition that without close integration of IT solutions and industrialization (implementation of breakthrough innovations through investment and their spillover across different industries), no economy in the world has been able to close the development gap between themselves and those at the frontier.

Now we stand on the brink of the third wave of IT transformation. In this stage IT becomes an integral part of the product itself in so-called "smart connected products" and, by doing this, IT has the capacity to unleash a new era of industrialization. The phrase "internet of things" has arisen to reflect the growing power of smart connected products in business ecosystem.

Smart connected products have three core components: physical, "smart", and connectivity. Physical components comprise mechanical and electrical parts of product. "Smart" components comprise sensors, microprocessors, data storage, and software. Typically, they embed operating system and enhanced user interface. Connectivity components comprise ports, antennae, and communication protocols enabling wired or wireless connections with the product. Connectivity takes three forms, which can be presented together: one-to-one, one-to-many, and many-to-many. Also, connectivity serves a dual purpose. First, it allows information to be exchanged between the product and its operating environment, its suppliers, its users, and other products and systems as well. Second, connectivity enables some functions of the product to exist outside of the physical device in what is known as the product cloud (software running on the manufacturer's or third party's server).

From operational perspective this is revolutionary technology. Smart components amplify the capabilities and value of physical components, while connectivity components amplify the capabilities and value of the smart components and enable some of them to exist outside the physical product itself. Mentioned changes will substantially affect many industries. The greatest effects are expected in manufacturing.

From business perspective, connectivity embedded in products in combination with product cloud is going to be the main driving force not only for cost reduction but also for product diversification in terms of higher customer perceived value. According to [27, p. 88], the final result is a self-generating cycle of value-chain based productivity improvement. Productivity gains, output growth and jobs creation have potential to be bigger than in previous two stages of IT transformation.

New technology enables strategic planning by superior data mining through collection, analysis, and sharing huge amounts of longitudinal data generated inside and outside the company that has never been available before. Building and supporting smart connected products require substantial investments and human capital. The changing nature of products is also disrupting existing value chains, forcing companies to rethink their strategy (configuration of value chain and concentration on activities with core competencies), reshaping industry structure and prevailing strategy of industry leaders by exposing companies to new competitive opportunities and threats.

Growing capabilities of smart connected products not only reshape the competition within industry (strategic focus in the value chain) but also expand industry boundaries (strategic scope). This occurs as the basis of competition shifts from discrete products, to "product systems" consisting of closely related products, to "systems of systems" that link an array of product systems together. The core of competition thus shifts from the functionality of discrete products to the overall performance of product systems, in which the company is just one player.

The foundation of competitive advantage is operational effectiveness. It requires embracing best practices across the value chain throughout implementation of leading-edge technologies. Smart, connected products are shaping new standards for operational effectiveness, dramatically raising the bar in terms of best practices and also creating new best practice across value chain.

Smart connected products will have a broader impact on economic growth than post-crisis innovations (mainly cost-reduction innovation and muted innovation across large part of the economy). They have the capability to deal with output gap and jobless recovery, and by doing so, to substantially affect the trajectory of the overall economy toward sustainable employment.

The impact of innovations on growth shifts the categorization of innovations to performance-improving, efficiency and market-creating innovations [4, pp. 62-63]. Performance-improving innovations replace old products with new and better models. They generally create few jobs because they are substitutive. Efficiency innovations help company make and sale mature, established products or services to the same customer at lower prices. So-called low-end disruptions involve the creation of new business model. Efficiency innovations play two important roles: they increase productivity, which is essential for maintaining competitiveness, and they free up capital for more productive use. Market-creating innovations transform complicated or costly products so radically that they create a new class of customers or new markets.

Government with specific industrial policies must encourage IT-driven technological transformation by supporting information and communication technologies (ICT). Government should equip individuals through education with the skills and core competencies to participate and comply with the rules and regulations needed to support technological change in the right direction.

Also, government must engage itself in combating the forces that are blocking technological change. One of them is financialization. Namely, financialization makes market-creating innovation appear less attractive as investment. Typically they bear fruit only after 5-10 years. In contrast, performance-improving and efficiency innovations typically pay off within 1-2 years. What is worse, growing market-creating innovations lead to off-balance financing. Efficiency innovations take capital off the balance sheet, however. To top it off, efficiency innovations almost always seem to entail less risk than market-creating ones because the market for them already exists. Development Bank is an important step in the right direction.

Rationale for industrial policy on Serbia's road to recovery

For more than a decade transition strategists, architects of the system, and policy makers in Serbia have been explicitly guided by neo-liberal doctrine. Privatization, liberalization, and deregulation, along with inflation targeting, were the main pillars of that wisdom. Unfortunately, development model and policy platform were inconsistent with macroeconomic reality (output gap and cost-push inflation) and microeconomic performance (low and constantly diminishing competitiveness). An exclusive focus on inflation control by using monetary measures makes sense when economy does not suffer from inherent structural imbalances which uphold recession or deflation pressures. The same is valid when there is demand-pull inflation. However, under significant output gap (transitional and current) and cost-push inflation, massive liberalization combined with ineffective privatization leads to deindustrialization and deepening of previous fractures of the system. When cost-push inflation dominates the system, keeping inflation (actually, consumer price inflation) under control is not a guarantee of macroeconomic stability because, among all, inherent volatility in global commodity markets strongly influences core inflation.

A quarter of a century after the start of transition structural imbalances in Serbia's economy are deepened. Output gap (transitional and current) is wide and persistent, unemployment is high, and investments are limited. In transition process output is critical even though the rebound in employment has typically lagged behind the rebound in output. Since 2001, the lag has increased dramatically. Employment has not yet caught up to where it was before the recession began, and it is expected to lag in the following years. The main reason is a continuation of deindustrialization. The eclipse of the real economy (manufacturing especially) is followed by high level of financialization.

In the 2H of 2014 Serbia has entered technical recession. High unemployment combined with the effects of austerity measures reducing the level consumption and reinforcing recessionary trends, threatens to push the economy further into recession, maybe depression.

Due to the threat of default, policy makers in Serbia must prioritize the time as a scarce resource. So, from that perspective, let's return to our central question phrased in a new way: What are the key tenets that guarantee the escape from downside scenario? And, what is the first step in good direction? The key tenets of structural reforms should be output expansion and productivity growth in tradable sectors and cost reduction in non-tradable ones. The latter affects the competitiveness of the former and creation of a new level playing field attractive for investment. Final result will be a turnaround manifested by increasing density of relevant (or globally competitive) players.

As regards the first step, needless to say, the emergence from the crisis is not possible without change of development model and economic policy platform. Also, the quest for a solution must take account of microeconomic (or business) perspective, while not ignoring macroeconomic one. Industrial policy as a core institutional arrangement must encourage the expansion of tradable sectors including technology development, spillover of innovation, and product diversification. This is the only way to substitute import and expand export in order to eliminate double macro deficits (current account and budget).

The new approach envisages radical changes. Specifically, in order to ensure sustainability of the system, it is necessary to do two things at once. First, to match income and expenditures by implementing austerity measures on the expenditure side. Second, to increase output through larger investment spending in priority sectors. These two processes are interrelated because increasing investment fuels revenue growth. Decrease in public expenditure influences public income decline, as well. Without investment, the public debt is wagging its own tail.

No doubt, orthodoxies governing the economy are so entrenched that we need a revised approach to articulate the urgency for change. To survive and prosper, Serbia needs a more balanced economy, less dependent on import and debt. Here are the assumptions about what a revised approach might address.

Assumption No 1. Output gap (low and stable), instead of inflation (low and stable), may (and should) be the principal tenet of economic policy. Other tenets complementary to principal one are as follows:

a. Expand and diversify public investment in tradable sector in order to reach balance of payments and budget robustness
b. Supply capacity expansion through private investment in missing gaps in value chains in tradable sectors
c. Innovation capacity increase through public-private partnership in technological platforms, especially in ICT and digital infrastructure

Assumption No 2. The anti-crisis program must have at least two major tracks: the systemic actions in transformation from import and debt dependent to export oriented and balanced economy, and sectoral activities to bolster priority sectors. The systemic track is aimed at removing deeply embedded structural imbalances within the economy. Also, it seeks to grasp previously mentioned positive externalities for the whole productive structure.

The first precondition for systemic actions is macroeconomic stability. Following the experience of the countries that have already come a considerable way toward catching up with developing countries, it is doubtless that macroeconomic stability is the key prerequisite for industrial policy effectiveness. Latest signals about macroeconomic fundamentals are encouraging (e.g. inflation), but some still need to be tackled in a more serious fashion (e.g. appreciated FX rate and double-digit interest rates). The systemic track can lead to various objectives. To this end, the actions should encompass a broad range of measures, from establishing a legal framework that stimulates export or enhances the preference for national products, to incentives for innovation, energy conservation etc.

The sectoral track has several layers. The most conventional one refers to programs created to boost competitiveness in sectors with already revealed comparative or achieved competitive advantage [8], [17]. One of the tenets is to transform the country's static comparative advantage into dynamic competitive advantage based on broad and concerted efforts under selected industrial policy (organic food agriculture, for example). The next layer refers to consolidation and efficiency improvement in mature industries with natural monopolies (energy, for example). This is a prerequisite for greater stability of the economy and stronger independence of import. Finally, the most important layer is mobilization of critical skills and knowledge necessary for a breakthrough in strategic areas that move the economy towards and beyond technological frontier (ICT, for example). The purpose of this program is likewise to break down scientific and technological barriers to innovations. Following [5, p.305] sectoral program within industrial policy for Serbia could be conceptualized as presented in Figure 6.

Assumption No 3. Boosting investments is an absolute must. Economy that intends to reach sustainable employment must respect "3+ and 40+" principle, in the sense that compound average growth rate is no less than 3%, and share of investment in GDP formation is no less than 40% in the middle run.

The reality is that prevailing logic of the central bank in maintaining financial stability and low inflation will overwhelm strategic imperatives of the government for new investment. As long as we continue this siloed approach, political leaders run the risk of falling further and further behind with the needs.

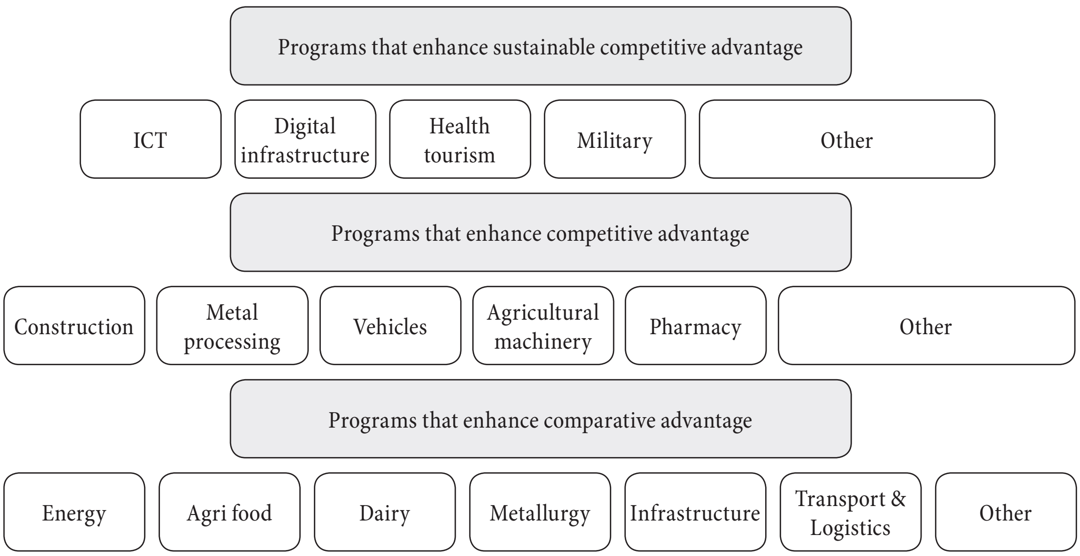
Assumption No 4. Heterodox development model and related policy platform is the field where there will be major conceptual breakthrough. New doctrine is based on integration of core economic policies with industrial policies. Industrial policies are defined for priority sectors (sectors with comparative and competitive advantage). Core policies function with automatic stabilizers. In monetary policy, stable and real (slowly depreciated eventually) FX rate is automatic stabilizer. Within tax policy, treatment of investment income like ordinary income could be automatic stabilizer, too. Another effective automatic stabilizer could be lower tax rate on capital gains.

The core institutional arrangement for implementing the previous should be industrial policy in priority sectors of the economy. Core economic policies lubricate industrial policies. In the new approach government could not escape responsibility in choosing priority sectors and defining adequate industrial policy measures. Neo-liberal doctrine could not be an alibi for inert government any more.

However, the most important decision is still related to the selection of priority sectors that will be at the center of industrial policy. Considering priority sectors, each developing country needs to address the following doubts. Is it possible to make a breakthrough and achieve advantage in sectors whose comparative advantage has not yet been revealed? Moreover, is it possible to take courage, cross domestic boundaries and direct industrial policy towards achieving competitive advantage on the global market?

It is always possible to play safe and support development of industries in well-known priority sectors with comparative advantage for domestic market (e.g. for the purpose of import substitution). This orientation assumes taking risk of increased inefficiency due to suboptimal scales and protectionism. Alternatively, the government

Figure 6: Sectoral program for industrial policy in Serbia



could promote these sectors for the global market, but then it is risking capacity underutilization if numerous countries have similar industry priorities, and financial distress due to high public debt and released guarantees.

Assumption No 5. Repurposing the capital from domestic sources for investment financing. The central bank should no longer husband financial capital deposited in the banking industry. Financial capital in banking industry should be abundant and cheap enough. The role of banks is not only agglomeration of savings and buying government securities, but also, and primarily, financing of capital investments. It implies changes in monetary model and interest rate policy. Priority sectors for reindustrialization can (and should) use the capital, not hoard it. Hurdle rates are not handed down by a deity. They should be changed as the cost of capital changes. Also, the government could help repurposing migratory capital from households and timid capital (from profit making companies) to become enterprise capital (owners' equity). One way to do this is through tax policy. For example, imposing gradually Tobin's tax on financial transactions helps reducing high frequency trading. Last but not least, on the company level there exist some solutions like full voting power for loyalty, extra share or extra dividends mechanisms (L-share). These measures require some adjustments in the Company Low.

The financial system is the economy's circulatory system. Without it, capital cannot flow to where it is needed. The foreign banks that have driven financial sector's incredible growth are the heart of Serbia's financial system. A heart, however, can grow so big that it threatens the economic body. Metaphorically speaking, Serbia's economy is suffering from an enlarged heart. Such a heart might even become unable to perform its basic functions.

Assumption No 6. Public sector emancipation through restructuring and full implementation of corporate governance in order to energize investments. It is new neo-liberal illusion that only the corporate sector rationalization inspired by tax policy adjustments can solve nonrationalities in the public sector, and put the budget into balance [36]. Intensification of investment in the public sector without restructuring (rightsizing of assets, capital and employees) is policy of "saddling the death horse".

Corporate governance can establish equality between the corporate and public sector. The job of managers in the public sector should not be reduced to sourcing, assembling, and shipping the numbers that deliver short-term gains. The only viable approach to managing a state-owned company is to maximize its value in the long run. The problem, of course, is not with tools but with us.

Assumption No 7. Extent and scope of industrial policy must be consistent with comparative advantage determined by existing structure of national economy. Correct identification of attractive policy tenets is another precondition for superior results.

Also, the fit between strategic audit, capabilities and prescribed policies is critical. For example, clustering is an efficient tool for achieving principal tenets. New clusters do not occur spontaneously. They are results of deliberate government industrial policies. Namely, the government provides necessary infrastructure and coordinate collective actions. But, this policy is efficient only in economies reaching middle income level.

Assumption No 8. Technological platforms play a crucial role in competitiveness improvement. For catching up global leaders, Serbia desperately needs a new ways to energize technological change. Investing in technological platforms must be preferable to doing nothing. To provide competitive position on a global scale industrial policy assumes developing and promoting sectors that lead the national economy toward technological frontier. Dynamic and efficient growth is possible to achieve before financial burden becomes encroaching.

The first guiding principle of comprehensive industrial policy is to strengthen critical competences and operations in sectors in which technological innovations play vital role. This does not refer to large and complex companies only, but and predominantly, to microscopic and SMEs penetrating market niches. It is a road toward the creation of competitive advantage.

Conclusion

The very first questions in strategizing about Serbia are: What is and what will be in the future? Serbia is a microscopic economy, the late developer with a delay in transition toward the road to higher development. The strategic audit of Serbia's position indicates the dominance of threats over opportunities. Structural imbalances are the most serious threat. In an unbalanced economy financialization undermines the system in many ways.

Fundamental controversy is that the people act against their own individual and mutual interests. It looks like a paradox when default is better option than being continually near to default. However, if you calculate debt increase to escape default, the previous point seems to be reasonable. It is not economically sound and politically sustainable to sacrifice the future of coming generations and constantly monetize erroneous doing of the current generation. Over and over again, people make decisions that are contrary to their best interests. So, let us return to the question raised at the beginning of this article: Why do people act against their own interest? The answer is in two words: wrong system. We do not want to fix it up. We prefer to finish with it and change it.

When balance between players in global competitiveness game is rapidly shifting, core competence for each country is going to be strategic flexibility. Key question is not what is right, but what would have to be right? In the new context, the role of government is not only to achieve greater geopolitical positioning and maintain political stability, but also to encourage development of the new model of growth and related policy platform. To be responsive, the government should be responsible.

The orthodoxies governing development and policy in Serbia are so entrenched that we need the new approach to articulate the paradigm change. Here is what new approach might address.

The purpose of new wisdom is elimination of hidden fractures of the system and intensification of investments in tradable sectors. The point is to make the invisible visible and offer long-term solutions for deeply rooted problems. In doing this, austerity is inescapable. It is not easy to get the people to understand something when their salary and pension depend on not understanding it. For a strategist, the *status quo* is not an option because it leads to a continuation of regression whose result may be an entire society twisted to serve the interests of its politicians, further increasing their power in a vicious cycle.

In a quest for a solution, pendulum should not be shifted from one extreme institutional choice to the other, from the proposition that the market is the best regulator to the proposition that the government is the only master. We opt for a heterodox approach which realigns development model and economic policy platform. Industrial policy is crucial element of the new wisdom. To paraphrase *J. Stiglitz* again, the question is not whether any government should engage in industrial policies, but how to do it right. The quest for "smart" industrial policies is in the center of our answer.

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MANAGING THE GREEN SUPPLY CHAIN: CONCEPT IMPORTANCE AND INDIAN IT SECTOR CASE STUDY

Upravljanje „zelenim" lancem snabdevanja - značaj koncepta i studija slučaja IT sektora u Indiji

Abstract

Supply chain management is still considered to be a relatively new business philosophy which has been the subject of the preoccupation of both scientific and expert public during the last 30 years. Regardless of its novelty, this business philosophy is very dynamically evolving, constantly improving its existent concepts and creating new ones which form part of it. In this manner it only confirms its importance for doing modern business. The introduction of the green supply chain and its adequate management should precisely be regarded in the context of the mentioned dynamic changes. The consideration of the importance of the green supply chain is the subject of detailed analysis in this paper. The very paper is divided into three parts. Within the first part we define the concept of green supply chain and its chosen important aspects, in particular its potential advantages for companies as well as its basic strategic options. The second part of the paper is dedicated to the analysis of the most important strategic activities within the green supply chain management process: green manufacturing and re-manufacturing, reverse logistics and waste management. Finally, within the third part of the paper we consider the challenges of adequate green supply chain management and the use of this concept in business practice of companies in IT sector in India.

Key words: *green supply chain, risk strategy, efficiency strategy, innovation strategy, "closed loop" strategy, green recycling and re-manufacturing, reverse logistics, waste management, IT sector, India*

Sažetak

Upravljanje lancem snabdevanja i dalje se smatra relativno novom poslovnom filozofijom koja je predmet preokupacije naučne i stručne javnosti u poslednjih 30 godina. Bez obzira na to, ova poslovna filozofija veoma dinamično evoluira, konstantno unapređujući postojeće i kreirajući nove koncepte koji čine njen sastavni deo. To je dokaz više njenog značaja u kontekstu modernog poslovanja. Nastanak koncepta „zelenog" lanca snabdevanja i njegovo adekvatno upravljanje upravo treba tumačiti u duhu pomenutih dinamičnih promena. Razmatranje važnosti koncepta „zelenog" lanca snabdevanja predmet je detaljnije analize u ovom radu. Sam rad podeljen je u tri celine. Unutar prve celine, razmatra se pojam koncepta „zelenog" lanca snabdevanja i odabrani važni aspekti koncepta, sa posebnim fokusom na koristi koje preduzeća mogu imati od njegove primene kao i na strateške varijante koncepta. Druga celina rada posvećena je analizi najvažnijih strateških aktivnosti pri upravljanju „zelenim" lancem snabdevanja: „zelene" reciklaže i ponovne proizvodnje, povratne logistike i upravljanja otpadom. Konačno, u okviru treće celine razmatraju se izazovi adekvatnog upravljanja „zelenim" lancem snabdevanja i primena ovog koncepta u poslovnoj praksi preduzeća IT sektora u Indiji.

Ključne reči: *„zeleni" lanac snabdevanja, strategija rizika, strategija efikasnosti, strategija inovacija, strategija „zatvorene petlje", „zelena" reciklaža i ponovna proizvodnja, povratna logistika, upravljanje otpadom, IT sektor, Indija*

Introduction

The idea of supply chain management first became the focus of interest of a group of consultants during the eighties of the 20th century. Shortly after, it seriously expands and grows into an individual business philosophy. The key elements on which this philosophy is based mostly refer to the concept of *Value Chain*, developed by the American professor *Michael Porter* [22, p. 63]. Professor *Porter* has pointed out that all activities within a company can be divided into primary and support activities, depending on whether they create value or just acquire basis for its creation. The link between mentioned activity groups adding value to products and services of a company is precisely known as the Value Chain [23, p. 5]. Based on such an idea, supply chain management can be defined as "connection between different stages of a business process creating the link between flows of raw materials, production, transport, resource distribution, information and financial flows adding value to finally delivered products and services" [4, p. 32].

The philosophy of supply chain management is dynamically changing and developing fields of influence dictated by the market trends. Taking into account serious ecological problems threatening to permanently change the way people live and work, there have arisen numerous so-called green initiatives which are being incorporated in the majority of modern business philosophies, including supply chain management. As a response to these initiatives the idea of green supply chain developed and is the main subject of analysis in this paper. Further on, special attention is dedicated to explaining the basic concept idea and its important aspects, followed by managing its key activity groups. Finally, we consider the adequate green supply chain management practices of companies in IT sector in India.

The green supply chain: Concept and important aspects

Integrating the basic principles of environmental management into managing the entire supply chain is important for achieving a "greener" supply chain and preserving the competitive advantage of companies forming it. Also, it is important for boosting business profit and achieving determined market goals [24, p. 901]. The concept of green supply chain is difficult to define in a uniform manner since there are various interpretations of it. For example, *Zhu* and *Sarkis* claim that green supply chain ranges from "activities starting with green procurement up to integrated supply chains involving suppliers, producers and clients finishing with reverse logistics "closing the loop" [35, p. 475]". According to an interpretation of another author, the green supply chain can be defined as "an integration of ecological thinking within supply chain management including product design, supplier selection and resource procurement, the production process, delivery of final products as well as managing those products after their life span ends" [27, p. 56].

Based on the revolution connected to the philosophy of quality management from the eighties of the 20th century, followed by the revolution caused by supply chain management philosophy during the nineties of the 20th century, the span of interest and interpretation of the green supply chain expanded onto corporate environmental management and ecologically-led production strategy [35, p. 477]. Regardless of the complexity and non-unified interpretation, the concept of green supply chain is becoming more and more the subject of interest both in academic and practical circles dealing with operation and supply chain management. It is interesting to notice that while conducting a literature review of the global presence of this concept in certain countries and industries, we can state that the interest for the implementation and limits of this concept is still dominantly connected to the most developed countries (Japan, USA, Germany, United Kingdom) [13, pp. 933-936] while there are only hints of concept use and serious related studies in developing countries such as Serbia.

Based on the analysis up to now, we can conclude that the concept of green supply chain is rapidly evolving and becoming more complex. Therefore it is evident that we cannot analyze all the ideas of the concept within this paper. That is why, continuing, we only deal with those aspects crucial for the concept interpretation and our further analysis.

From traditional to green supply chain

Green initiatives and raising the ecological awareness among companies represent a new challenge for their future organization and the way of functioning. In order for the new trends to best fit company business it is necessary to introduce certain modifications in the coordination of their activities. The introduction of such modifications is certainly not an easy task. Therefore, it is a real challenge to create a milieu in which the industrial development and environmental protection can coexist in symbiosis [33, pp. 2-4]. The necessary modifications are explained by differences occurred during the transition from traditional to green supply chain.

The traditional supply chain can be defined as "the process of production integration within which raw materials and resources are used for the production of final products and then delivered to customers via the wholesale/retail distribution channels" [17, p. 47]. The design, shaping and analysis of the traditional supply chain focus exclusively on the optimization of procurement and distribution processes regardless of the environmental repercussions [7, pp. 50-51]. Key issues addressed while managing the traditional supply chain are given in Table 1. The traditional supply chain is shown in Figure 1.

Table 1: Key issues while managing the traditional supply chain

Managing the traditional supply chain: Key issues
The determination of the most efficient production/distribution agenda
The optimization of the needed supply quantities of raw materials/materials/semi-products/final products
The optimization of the number of supply chain participants
The determination of optimal locations of distribution centers
The determination of the most adequate assignments for production
Managing supplier/buyer relations
Product differentiation and specialization

Source: [7, p. 54]

The first step needed for the adoption of the so-called "green" initiative is to redefine the basic structure of the entire supply chain from the aspect of ecological awareness. The mentioned redesign refers to introducing the practice of scarce resources limited usage and minimizing the quantities of waste. In order to reach the contemporary interpretation of the green supply chain concept it was necessary for the ecological management, as an important part of the concept, to go through five phases (see Table 2).

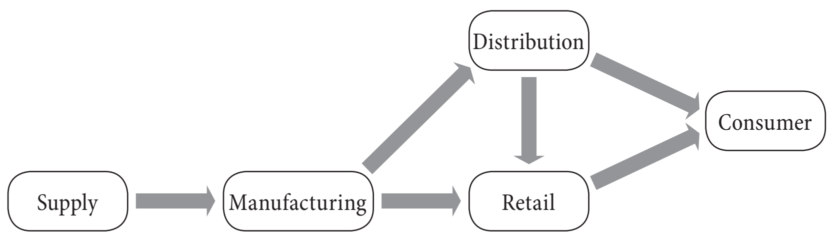
Table 2: Development phases of the ecological management

Phase	Phase characteristics
1. Problem solving	The traditional approach which sees the ecological legal regulations as additional business costs
2. Coordinated management	First attempts of coordinated and integrated management of ecological legal regulations
3. Promise management	A visionary and long term planning which uses risk management to balance future ecological obligations and costs
4. Eco-efficiency management	Pollution prevention instead of pollution control; The reduction of the quantity of generated waste and resource reduction
5. Total integration	Developed ecological component; Global concern for the production process and product life cycle

Source: [7, p. 58]

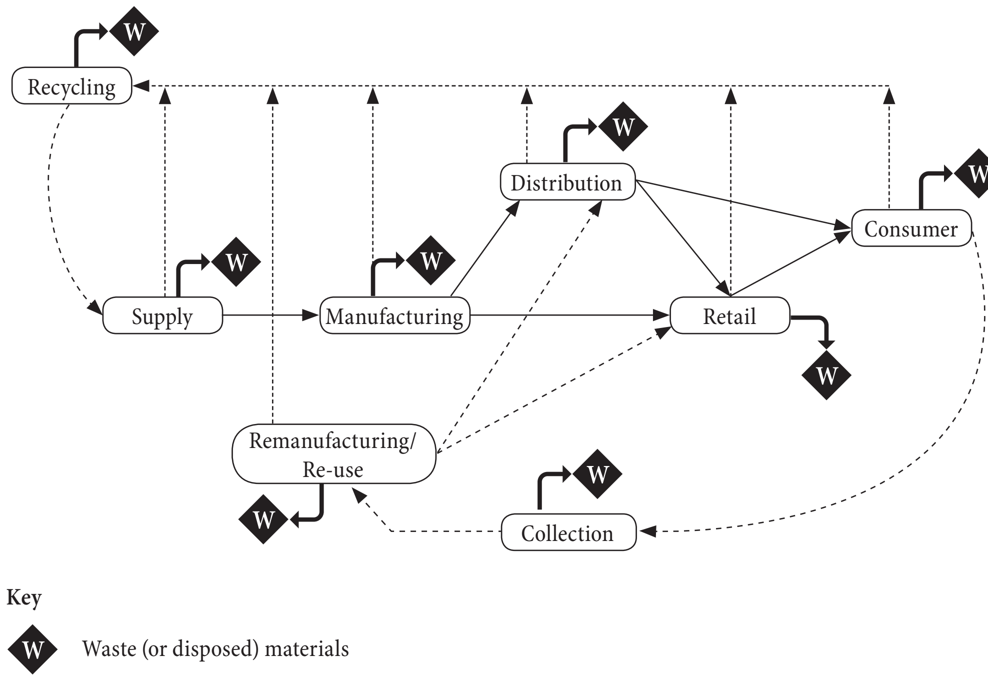
From the analysis up to now we can conclude that green supply chain practically represents an improvement of the so-called traditional chain. Namely, it encompasses all traditional supply chain elements, with the addition of two-side product movement from producer to customer thus forming the so-called "closed loop" which also includes some new activities such as green recycling and re-manufacturing, reverse logistics and waste management. These activities are the subject of analysis in the next part of the paper. Continuing, we show a graphic representation of the green supply chain (see Figure 2).

Figure 1: Traditional supply chain



Source: [1, p. 3]

Figure 2: The green supply chain



Source: [1, p. 7]

As it is shown in Figure 2, full lines represent the traditional supply chain, whilst the dotted lines stand for the green supply chain. *W* stands for *waste* which is a product of the entire process and all entities and must be taken care of by the supply chain participants. Also, the figure shows new groups of activities. Having explained the transformation from traditional to green supply chain continuing we consider the key advantages of the introduction of this concept.

The advantages of green supply chain introduction

Under the influence of the mentioned green initiatives, more and more people and companies have become aware of the growing ecological problems such as global warming, the usage of damaging substances which are toxic for health and environment as well as problems caused by irrational spending of limited natural resources. The governments of the majority of developed countries have carried out numerous campaigns for promotion and raising of public awareness regarding these issues. Some companies have accepted right away the "green" principles such as using environmentally non-harmful raw materials, then reducing energy consumption, using recycled packing paper etc. These principles have been extended to all business areas as well as the supply chain [9, p. 43].

However, when similar topics are analyzed, it is a common demand of the companies to know what the advantages of a certain business concept are when they decide to introduce it. Therefore, the question is: Which is the exact advantage of using the green supply chain concept for company's business besides the ecological benefits for the society as a whole? Fulfilling the ecological demands is considered the main criterion of preserving the competitive advantage in modern business, as well as the criterion of business process sustainability and profitability achievement [19, p. 1440]. The most often stated reasons for using the concept of green supply chain that have proven in business practice are given in Table 3.

Table 3: The rationale for using the concept of green supply chain

The main reasons for using the concept of green supply chain
Target marketing
Resource sustainability
Lower costs/greater efficiency
Product differentiation and achieving the competitive advantage on that basis
Lower competition pressure
Adopting regulations and lowering risks
Return on investment
Employee moral
Ethical reasons

Source: [5, p. 24]

It is important to mention that the advantages achieved by using the green supply chain concept do not necessarily need to have only the economic aspect, but can be equally justified for the company in a social and ecological way. *Stevels* points out that the advantages of using green supply chain concept can be threefold: material, non-material and emotional [28, pp. 97-98]. *Material* benefits have to do with lower production costs, costs of suppliers and end-users, lower resource usage as well as a lower degree of burdening the environment and society. *Non-material* benefits allow lesser supplier rejection, production process facilitation and better social acceptance. Finally, *emotional* benefits create a positive image of producers and suppliers, making a better impression with clients and sending a positive image that the entire economy is developing well [28, pp. 99].

The green supply chain strategies

Having considered the basic idea and importance of the concept, we now analyze the strategic options that can be used while managing the green supply chain. Efficient green supply chain management assumes the usage of traditional focus (costs/quality/service level) including ecological performances. Since every supply chain is formed of particular entities, activities, cultures and goals it is difficult to find a mutual strategy basis for all those elements. However, research carried out in this field, shows that practical situations most often differentiate four strategies typical for managing the green supply chain [33, pp. 7-8]:

- The risk strategy
- The efficiency strategy
- The innovation strategy
- The "closed loop" strategy

The risk strategy. This strategic option is most acceptable when there is an inter-organizational resource investment activity going on. Companies adopt this green supply chain strategy explaining that it is in accordance with the demands of stakeholders. The minimizing risk strategy is ideal for companies which put aside minimum funds for ecological issues or have just recently begun thinking of introducing the program of green supply chain. Also, one of the advantages of this strategy is the minimum management engagement and involvement of only basic clauses in contract agreements having to do with ISO 14001 standards [15, p. 1102]. Summing up, we can conclude that the use of this strategy offers companies clearly established ecological performance and benefits, as well as performance management by maximum capacities with global system recognition [18, p. 333].

The efficiency strategy. This strategic option is more complex and demanding compared to the risk strategy. The ecological performance and benefits are obtained through efficient fulfillment of operative goals and not through regulation obedience. The essence of this strategy is the possibility of achieving double benefits for the supply chain: both economic and ecological. This simultaneously demands a closer cooperation between suppliers and buyers. This strategy offers cost advantages in the sense of their reduction, but also fits easily into the existent organizational goals. However, this strategic option does not allow more technologically intense activities of managing the green supply chain, such as product design, raw material substitution or innovation. Therefore, the product resembles to the ones which are cheaper, due to poor material selection. This strategic option bears a constant risk since it only focuses on achieving the efficiency within the supply chain. Concluding, we say that this strategy is considered technologically weaker, but far more responsible when it comes to surroundings than the risk strategy [8, pp.170-173].

The innovation strategy. This green supply chain strategy sees ecological performance as specific demands which cannot be achieved by simple procurement policy or certificate possession [3, p. 176]. The green supply chain is regarded as a whole line of specialized processes, technologies and performance measures which alter the level of needed knowledge and participant cooperation. This strategic option demands a high level of innovation and integration of ecological performance within the supply chain in order to create ecological products [15, p. 1102]. In order for this strategy to be developed serious financial efforts are needed to contribute to faster innovative solution integration (such as ecological design, ecological product characteristics, repair/recycling) into the company environmental strategy [3, p. 178]. Only in this manner can a strong, ecologically aware production, distribution and usage system be developed.

The "closed loop" strategy. This strategic option is the newest among green supply chain strategies and represents a very complex form of cooperation between participants. It is often considered to be the same thing as *reverse logistics*, which is only one of the specific activities of green supply chain and a term of less complexity, as shall be elaborated further on. The implementation of the "closed loop" strategy should enable material retention and its renewal through the process of repair or recycling [16, p.1150]. This strategy connects the ecological performance throughout the entire supply chain. Unfortunately, there are very few examples of its practical usage mainly due to bad and incomplete control over the channel of reverse logistics as well as due to bad infrastructure. However, those companies which have succeeded in implementing this strategy have a high level of control over the entire process of organizing the reverse logistics. In order to be implemented successfully, the "closed loop" strategy demands a high level of coordination and integration among partners as well as complex knowledge, which means years and years of effort and hard work [15, p. 1105].

Managing specific activities of the green supply chain

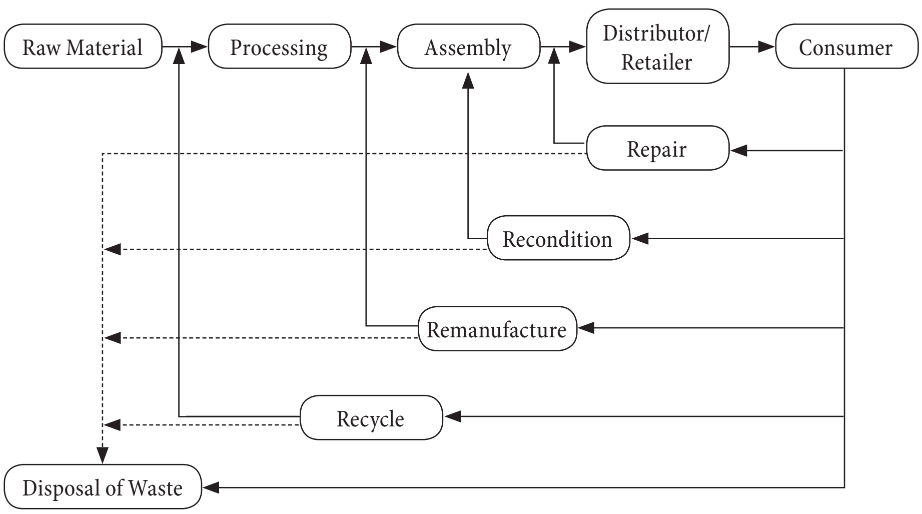
While explaining the new concept of green supply chain we have pointed out that it assumes the reconfiguration and addition of activities compared to the traditional supply chain. Also, we have pointed out that three new activity groups can be differentiated within this new concept. Those activities are: recycling and remanufacturing, reverse logistics, and waste management. Although these activity groups can be given a different term, depending on the author, according to their contents they are most often named in the manner we use in this paper. Continuing, we explain the essence of all three activity groups.

Recycling and remanufacturing

This activity group is very important for adequate green supply chain management. *Recycling*, which is mostly motivated by economic and legislative reasons, can be defined as exploiting the contents of used and/or non-functional products. Out of total recycling costs, more than 90% account for logistics activities [29, p. 22]. The term *remanufacturing* stands for production with integrated recycling. This green supply chain activity has found most use within the automobile industry as well as tire and electronics industries [14, p. 2069]. Although these two activities dominantly determine this group, recently a so-called *4R strategic model* has been developed. Besides *recycling* and *remanufacturing* it also includes product *recovery* and *repair,* thus its name [1, p. 337]. The way 4R strategic model influences the supply chain activities is shown in Figure 3.

Based on the information from Figure 3 we can conclude that there is no isolated treatment of strategic

Figure 3: 4R model influence on supply chain activities



Source: [1, p. 337]

activity groups of the green supply chain. Namely, we can see that waste management, which shall be elaborated in detail further on, follows every phase of the supply chain influenced by the 4R model.

Reverse logistics

Defining logistics as "a process of planning, implementation and control of flows of raw materials, semi-products and finished products as well as the flows of information from the moment of their creation till the moment of their spending with the aim of pleasing customer needs" [25, p. 22], we have practically obtained the definition of reverse logistics as well, since it involves all the foregoing activities. The only difference is that reverse logistics involves those activities, but in a reverse order, as shown in Figure 4.

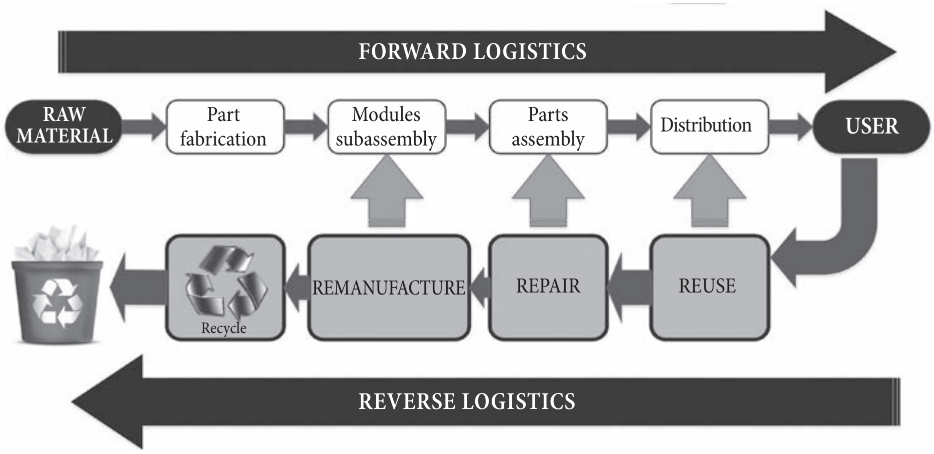
As can be confirmed from Figure 4, there is a clear interconnection between all activity groups of the green supply chain. The awareness of importance and skill of managing reverse logistics constantly keeps growing, thus there is great practical interest for its implementation. Since reverse logistics is a critical activity in some industries, it is particularly present within them. A good example can be found in the automobile industry where the market for trading with repaired automobile parts is estimated at USD 36 billion. In USA alone there are about 15,000 companies dealing with car repairs and demounting. That means that around 50% of all original engines are remounted and reused, which saves up a couple of million gallons of crude oil and other oil derivatives [26, pp. 30-32]. Although we have not pointed that out explicitly up to now, we can see from the example that the return of product package/its remount is considered one of the most important activities within this group.

The reasons why reverse logistics is considered a strategically important activity can be divided into two groups: a) competition pressure and b) supply chain clearance. Under competition pressure we assume the liberalization of product return policy, in order to retain customer satisfaction. This policy is differently treated in different parts of the world. For example, it is most liberal in the USA. Supply chain clearance means that clients can get rid of their supplies and free up the space for new products, decreasing the spent funds and offering maximum protection [25, pp. 25-26].

Waste management

This activity group within the green supply chain can be defined as "prevention, surveillance, reuse and permanent disposal of solid waste" [6, p. 219]. Talking about solid waste, we say it can be divided into three groups: a) communal waste, b) agricultural waste, and c) special waste (dangerous materials, chemicals and sewage dump). While defining the green supply chain we have seen that waste is created within every activity of every entity, so the question is not of its existence, but of its quantity. However, one of the modern tools created within waste management is the SR/P2 model which is based on pollution prevention in the source (within the products or production process) rather than on its elimination upon creation. Basically, this model tends to eliminate waste or at least to reduce

Figure 4: Regular flow of logistics activities and reverse logistics



Source: [25, p. 23]

it to the lowest possible level [11, p. 41]. It is clear that up to now conditions in company business have not yet been created in order for the waste to be completely eliminated as a category. That is why adequate waste management is of great importance.

The strategic importance of this activity group occurs due to the augmentation of quantities of solid waste in the last thirty years. For example, in the USA only, there is an annual production of 12 billion tons of industrial waste, from which only 208 million represents communal waste. It is a frightening fact that out of that quantity only 27% is recycled and turned into fertilizers, 16% is incinerated and 57% stocked in landfills [34, p. 92]. Based on stated data, we can conclude that the importance of waste management is indisputable and that it must be taken care of with much greater attention in the period to come.

Successful management of the green supply chain and its implications for Serbia: Indian IT industry case study

The previous theoretical review clearly indicates the growing importance of the green supply chain concept and its implementation. It is also clear that this business concept, as others, will not have an equal influence on all global economies, their sectors and companies. However, based on relevant global case studies as well as modest information from Serbian national economy, we can conclude that there are some industries which cannot do without the implementation of the green supply chain concept. Driven by that logic, following we analyze in detail the IT sector in India and their experience with the implementation of the green supply chain concept.

Reasons for choosing Indian IT industry as a case study example

The questions with which we begin the analysis are: "Why India?" and "What are the implications of this case study for Serbia?" There are several reasons for this choice. First of all, the selection of particular industry was made since the IT sector has a lot of potential for "greening" its supply chain activities. Second, the country selection was made since the IT sector has been developing within it very intensively in the past few years, despite the global economic crisis. Third, the information obtained from the analysis of this case study can be very indicative for Serbia since, according to some sources, it is expected to become a center for greenfield investments in IT sector, financed by some renown global companies [2]. Therefore, the chosen business case should depict the importance of the green supply chain concept on an industry example which can and must use it in order to survive. Further on, this case study analysis can be very indicative for Serbia, since our country could, with certain alterations, be faced with the "Indian scenario", which means that IT industry could develop rapidly and simultaneously start with the green supply chain concept initiatives in order not to be troubled with "dirty" technologies in the future.

The IT industry is one of the fastest growing global production industries, but due to short product life cycles and technology "ageing", also an industry with high rate of electronic waste. Thanks to the rapid connection between information and communication technology sectors, in the last decade India has become one of the leading countries in this field. The Indian market of technologically intensive products and services confirms steady growth with the passing of the years. The value of this market in 2012 was estimated at about EUR 14.9 billion, and just a year later, in 2013, the estimation was at about EUR 28.7 billion [21]. The Indian IT sector can be divided into the following subsectors: 1) hardware products subsector, 2) software products subsector and IT services, 3) business process outsourcing subsector (based on information technology). The greatest contribution is given by the first subsector, than third and finally second [21]. Serbia has a quite adequate level of software production and export, but the crucial production and export growth in Serbian IT sector could be achieved by opening up hardware production, which is best demonstrated within the Indian case study. The announced investment in Serbia, i.e. the construction of production capacities of the company Mubadala (for start, later accompanied by their suppliers) is precisely connected with hardware production and exports.

Incentives for and limits of using the green supply chain concept in India

Although India is second on the list of the so-called Clean Development Mechanism countries (CDM), the presence of polluted gases market made it more difficult for the clean technologies to be accepted and for the sustainable business practices to be wider spread. A certain advance has been made starting from 2012, when the period of uncertainty on the market of polluted gases appeared, which signalized the start of stronger restraint of gas emissions in India. In accordance with the growing global competition and therefore the concern for the environment, companies were asked not only to improve the quality of their products and to strive for innovative production with competitive prices, but also to develop such a supply chain that would be sustainable in a longer time period.

Unexpected for many, but still based on facts, the Indian economy has achieved significant success in the last twenty years in the sense of production growth, better resource usage, and thus better conditions for the environment. An average GDP growth rate of 7.5% in the last decade enabled India to highly position itself among global economies. Simultaneously with the advancement of the economy, grew the gas emission – from 1.2 billion tons of CO_2 in 1994 to 1.7 billion tons in 2007, which positioned India in the fifth place on the list of countries emitting polluted gases with the "greenhouse" effect. The gas emission per capita is 1.7 tons per inhabitant which is much lower than the global average of 4.3 tons per inhabitant [10, pp. 237-239]. The report issued in 2009 by the Indian Government states that in the following 20 years the gas emission per inhabitant shall be in the range from 2.77 to 5.00 tons per inhabitant indicating the "greening" of the supply chain and the determination to keep this problem under control [20, pp. 77-82]. Researching the implementation of the green supply chain management concept in Indian companies, we pay special attention to solid waste management, performance improvement and incentives as well as the obstacles to sustainable supply chain management. An interest is also shown in internal environmental management, green procurement, customer cooperation oriented towards ecological achievements, ecological product design as well as return on investment. While determining the status of India a special focus is also put on waste material reduction, waste recycling within companies etc.

The general state of Indian companies when it comes to managing the environmental issues is on an enviable

Table 4: The comparison of green supply chain performance in India, Japan and China (2010)

"Green" supply chain performance	Min. grade	Max. grade	Average India	Stan. dev.	Average Japan	Average China
1. Gas emission reduction	3	5	4.30	0.78	5.00	3.72
2. Waste water reduction	3	5	4.20	0.72	4.66	3.70
3. Solid waste reduction	2	5	4.10	0.94	4.78	3.57
4. Less use of toxic materials	3	5	4.20	0.75	4.67	3.72
5. Lower frequency of ecological catastrophes	3	5	4.30	0.64	4.89	3.82
6. Improvement of the company ecological position	3	5	4.20	0.75	4.89	4.08
Ecological performance – average			**4.22**		**4.82**	**3.77**
7. Procurement material cost reduction	2	5	3.77	1.12	5.00	3.34
8. Energy consumption cost reduction	2	5	3.69	0.82	4.89	3.28
9. Waste treatment cost reduction	2	5	3.30	1.10	4.78	2.99
10. Waste disposal cost reduction	3	5	3.60	0.66	4.78	2.99
11. Ecological catastrophe penalty reduction	2	5	3.40	0.80	5.00	3.46
Financial performance – average			**3.55**		**4.89**	**3.21**
12. Growth of goods quantity delivered on time	3	5	4.30	0.64	3.38	3.65
13. Lower stock levels	2	5	4.00	1.00	4.62	3.39
14. Lower waste levels	2	5	4.00	1.00	5.00	3.48
15. Product quality promotion	3	5	4.00	0.63	3.00	3.93
16. Product line improvement	3	5	3.90	0.54	4.78	3.81
17. Capacity usage improvement	3	5	3.90	0.83	4.78	3.78
Operative performance – average			**4.02**		**4.11**	**3.67**

Source: [32, pp. 125-134]

level, of course bearing in mind the characteristics of this country. Compared to economies of similar power and degree of development, the Indian companies have adopted the ecological management to a much larger degree, especially compared to China, which is similar in many aspects. As compared with China, India has introduced to a greater extent the elements of the green supply chain management, mostly concerning the return on investment, and least concerning green procurement. According to some research, the implementation of the green supply chain management in Indian companies brought about significant improvement of ecological and operative performance, and somewhat of financial performance as well, according to surveys carried out in three countries. [32, pp. 125-134] The evaluation range was from grade 1 till grade 5. Table 4 shows average grades obtained from the company sample of all three countries, minimum and maximum grade of individual attributes as well as the standard deviation of the grades of companies in India.

Besides the stated measurable indicators, an important incentive for the introduction and acceptance of the green supply chain management is given by the Indian government and the norms it imposes, as well as the corporate social responsibility of companies which affects their image. In that way companies are stimulated to work most actively on produced waste reduction and its recycling.

Indian companies should pay more attention to cooperation with suppliers of the second degree. These companies have shown themselves, but also to other companies in the supply chain, the significant results in ways of waste disposal and recycling. Summing up the total performance of the green supply chain management in India it is clear that financial results are not as yet high as expected. Compared to results of other relevant Asian countries, we can see that only Japan has better results. Indian companies have a lot of potential for improving raw materials and energy consumption, as well as waste treatment and disposal. Taking all into account, based on the latest available data from the end of 2012, India has shown significant improvement and results in the operative management of the green supply chain concept [20, pp. 77-82].

Examples of green supply chain management concept implementation in Indian IT sector

Indian Institute for energy and resources in New Delhi states that the participation of the IT sector in the total production of electronic waste accounts for 30% of its total amount. One of the reasons for this percentage is the shorter usage span of the computers – from 5 years during the nineties of the 20th century to 2 year a decade later. Precisely, in India this usage span is around 3 years [31]. The stated information indicates that enormous quantities of electronic waste are generated every year. The fact that adds seriousness to this problem in India is that more than 4 million used computers annually contribute to quantity of electronic waste. The following two examples show in detail how companies in India deal with ecological problems and issues related to the green supply management.

HCL Infosystems LTD is one of the leading Indian companies in the field of hardware production, integrated systems and IT services. Along with HCL Technologies, dealing with IT and consulting services, it forms HCL enterprise group. This company is the greatest vertically integrated producer of computers in India, owning four companies for computer production, all stationed in India. Computers are delivered to locations across India with the support of wide network of their partners, professional logistic companies. Every production location is coupled with the unit for tracking customer satisfaction, in charge of collection and resolving issues spotted on the field. The company has the widest distribution and retail network in India, encompassing 27 warehouses, more than 700 locations for packing and about 90 thousand retail objects in more than 11 thousand cities in India [12].

Green supply chain in production. From the very beginning, the focus of this Indian company has been sustainable development through ecologically acceptable IT products and services. Bearing in mind many projects the company has participated in, HCL is considered to be one of the companies in India with most usage of green supply chain management. Acting in that manner, the company has initiated the so-called "eco-secure" program which allows all the high ecological standards and procedures in the company's production and distribution process to be fulfilled. As a result of the given program, the company has started producing "green" monitors, equipped with special technology, enabling energy costs reduction up to 30%. Besides this product, the company has developed RoHS compatible computers, servers and laptops, which do not contain any damaging substances. Thanks to these actions, HCL is considered to be the leader among the producers of "green" integrated circles technology.

"Greening" the procurement. The company selects its suppliers based on the following criteria – high level of service quality, acceptable costs, a defined level of eco-regulations and demands fulfillment. In order to keep the suppliers constantly on the alert, they are evaluated in equal time periods, by a special form of supplier evaluation. HCL has a unique procedure within its supply chain which assures that suppliers will not be using prohibited materials or will be using them but in allowed quantities. Additional initiative in this field is the formation of the list of substances which are not officially prohibited, but are dangerous for the environment and health, thus their usage is controlled.

Waste management. The company practices a unique policy of recycling electronic waste, supporting its buyers to recycle old products in an ecologically-friendly way. HCL is also engaged in the reduction of illegal copying of ICT products and thus it started a campaign to prevent these activities in India. All HCL initiatives, including green manufacturing, electronic waste disposal and recycling and piracy banning, have helped "green" its supply chain and achieve ecologically acceptable business realization.

TATA Consultancy Services (TCS) is one of the leading companies in India when it comes to IT services, consulting activities and creation of unique business solutions. TCS is the part of the TATA group, the biggest conglomerate in India. It hires 240 thousand exceptionally trained consultants in 145 offices in over 40 countries which service 1,035 active clients. [30] "Greening" the supply chain is an important concept in this company's business strategy. All its activities are directed at the promotion of ecological initiatives within the supply chain, in order to maximize the influence on the environment.

"Greening" the information technology. TATA has undertaken numerous initiatives in order to reduce energy consumption of its data centers and computer stations. These initiatives include the so called "cloud" server, managing systems for server temperature regulation, procurement of equipment labeled "energy star", controlling computers on distant locations etc. The company has initiated a pilot project of virtual computers, with the aim to achieve additional energy savings. As for product consumption, TATA allows its employees to access the newest software or servers on-line, without its physical distribution on CDs [30].

"Greening" the procurement. While acquiring raw materials, TATA is focused on cooperation with suppliers who influence less the environment and use purer technologies in their processes. This is achieved through two paths of action: 1) spending less and 2) using recycled inputs.

Managing electronic waste. TATA diminishes its influence on the environment by using materials which are not harmful for it. This practice is achieved by affecting several fields [30]:

- Lowering the quantity of waste in its origin.
- Focusing on material usage with the possibility of reuse.
- Recycling. Every employee has at his disposal different kinds of containers for waste disposal and is obliged to put away the waste in accordance with its kind, i.e. in the adequate container.
- Buying products which contain recycled parts. This is an obligation for all processes of the company, for example, buying used and recycled paper.

Conclusion

The globalization and technical innovation have brought about new forms of modern business management, thus making the supply chain management the imperative of growth and success. Introducing sustainable and ecologically acceptable components is considered to be the improvement of the basic SCM concept, and is called the green supply chain concept. The implementation of the green supply chain management concept assumes the maximum usage of company resources and reduction of residual waste. This concept also leads to improving company image as well as operative performance and compatibility between companies, society and environment, by achieving sustainable development. Despite high implementation costs, this concept brings long-lasting economic and social benefits. A few years ago, companies dealing with the IT sector in India got familiar with the green supply chain management concept. The state of Indian economy, in some aspects, was very similar to the present state in Serbia: bad infrastructure, low level of GDP, a great number of low income customers etc.

Serious industry development and especially IT sector which started a few years ago in certain parts of Indian industry brought about the implementation of the green supply chain management concept. That was the right timing for India as a developing country with relatively "flexible" law obedience to enforce the adequate legislative solutions, introduce the relevant stakeholders to these solutions and start to implement them without exception. If it were not for these solutions, today India would be facing much more serious ecological issues. Thanks to the right laws headed by big IT companies as development drivers, India has achieved the fastest global success in solving ecological issues and improving the conditions of the environment.

The entire concept of green supply chain management is still new in Serbia. There are some partial actions on the level of individual companies, but not the entire supply chain. Of course, these actions mostly refer to companies from the IT sector, especially in the domain of commerce, but also within some brands from the automobile industry. Introducing certain laws, the state has tried to stimulate "green" company behavior, but these efforts had little results. The reason lies in the absence of serious state policy and lack of sanctions for breaking the rules concerning the environment-friendly laws. Therefore, apart from the theoretical review of the subject, we have paid special attention to the Indian case study, its IT industry development and company behavior in some segment of the green supply chain management concept. The Indian case study can be very indicative for Serbia, especially if announced investment plans in the IT sector in Serbia come true in the following few years. If our economy and government do not pay serious attention to the concept of the green supply chain, not just individually but as a whole, Serbia could become a "fertile" soil for pollution, waste accumulation and environment endangerment.

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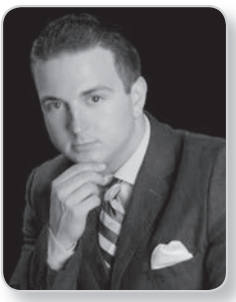

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CORPORATE GOVERNANCE: STATE AND TRENDS IN THE REGION – A REGULATORY APPROACH

Korporativno upravljanje – stanje i tendencije u regionu (regulativni pristup)

Abstract

Stability of the financial system depends on its ability to respond to the demands of the time in which it has to exercise its functions. If these functions are not fully implemented in the laws and regulations governing the financial system of a country, it is understandable that there is a need to align the legislation and system with the current needs and requirements of the financial markets. In everyday life changes are becoming increasingly normal and commonplace. The need for change has become one of the biggest challenges facing the modern strategic management of the company. Looking at the macro level, due to varying success in coping with the coming changes, a relative position of individual countries is changing, as well as their industrial base, wealth, and power.

In our circumstances, where the companies are in the process of transition, various transformation processes are gaining importance given that in many companies, in the past, the very scope and structure of businesses were jeopardized and that the quality of their performance has been below a minimally acceptable level over a longer period of time. Therefore, it is clear that if they are to successfully cope with the competition, they must first empower themselves to meet modern standards of business. The contemporary review of corporate governance cannot be undertaken without the consideration of important events and relationships that the practice of developed countries has crystallized, such as the rule of law, institutional development, contractual relationships within corporation, protection of property rights, managerial discretion, and the agency problem. The study of corporate governance requires a multidisciplinary approach, involving finance, social sciences, political science and strategic management. Corporate governance system refers to the entirety of laws, effective institutions, professional chambers and business ethics. In emerging markets many of these links are absent, which makes the establishment of a stable corporate governance system even more difficult due to the weaknesses of public governance. Effective corporate governance is based on the accountability of corporate management which should act in the best interest of shareholders and other stakeholders interested in the success of corporations. It basically derives from elementary rules of property rights protection and is a prerequisite for the integrity of market institutions.

Key words: *corporate governance, market, competitiveness, institutions, public sector auditing*

Sažetak

Postojanost jednog finansijskog sistema zavisi od sposobnosti tog sistema da odgovori zahtevima vremena u kome treba da ostvaruje svoje funkcije. Ukoliko ove funkcije nisu u potpunosti implementirane u zakonima i drugim propisima kojima se uređuje finansijski sistem jedne zemlje, razumljivo je da postoji potreba da takvi propisi i takav sistem budu usklađeni sa aktuelnim zahtevima i potrebama finansijskog tržišta. I u svakodnevnom životu promene sve više postaju normalna i uobičajena stvar. Potreba za promenom postaje jedan od najvećih izazova sa kojim se susreće strategijski menadžment savremene kompanije. Posmatrano na makro planu, zahvaljujući različitoj uspešnosti u suočavanju sa nastupajućim promenama, preuređuje se relativni položaj pojedinih zemalja, njihova industrijska osnova, bogatstvo i moć.

U našim uslovima, gde se kompanije nalaze u procesu tranzicije, različiti transformacioni procesi dobijaju na značaju imajući u vidu da su u velikom broju preduzeća, u prethodnom periodu, ugroženi obim i struktura delatnosti, te da je kvalitet njihovih poslovnih performansi u dužem vremenskom periodu ispod nekog minimalno prihvatljivog nivoa. Stoga je jasno da se one da bi se uspešno nosile sa konkurencijom najpre moraju osposobiti da odgovore savremenim standardima poslovanja.

Savremeni pregled korporativnog upravljanja nije moguće sprovesti bez razmatranja važnih pojava i odnosa koje je iskristalisala praksa razvijenih zemalja. To su vladavina prava, institucionalna razvijenost, ugovorno definisanje odnosa u korporaciji, zaštita vlasničkih prava, diskrecija menadžera i agencijski problem. Istraživanje korporativnog upravljanja zahteva multidisciplinaran naučni pristup koji obuhvata finansije, društvene nauke, političke nauke i strategijsko upravljanje. Pri čemu, sistem korporativnog upravljanja predstavlja celinu koju čine zakoni, kvalitetne institucije, profesionalna udruženja i etičnost poslovanja. Međutim, u zemljama u tranziciji mnoge od ovih karika nedostaju, pa je pokušaj postavljanja stabilnog sistema korporativnog upravljanja suočen s teškoćama zbog slabog javnog upravljanja. Kvalitetno korporativno upravljanje obezbeđuju odgovorne upravljačke strukture uz uvažavanje interesa akcionara i svih zainteresovanih subjekata za uspešno poslovanje korporacija. Ono je u osnovi izvedeno iz elementarnih pravila zaštite svojine i predstavlja preduslov integriteta tržišnih institucija.

Ključne reči: *korporativno upravljanje, tržište, konkurentnost, institucije, revizija javnog sektora*

Introduction

Effective corporate governance contributes to building trust and confidence in the company's operations, providing an easier access to external sources of financing, and increasing the credibility of the company vis-à-vis investors, employees, and other stakeholders.

This is especially important for publicly traded companies, because by entering the financial markets, a corporation is required to disclose information about the listed capital in a way that its prospectus becomes publicly available to a large number of investors (diversification of information). On the other hand, investors also diversify their portfolio in order to reduce a specific (unsystematic) risk of investments. Thus, the capital market is the intersection of demands for diversification, by which participants aim to provide the best possible option for their activities while assuming lower risk. However, the process of diversification cannot, in spite of internationally defined standards and rules of conduct, by itself provide the safest and most secure realization of interests of all participants, but can only reduce the risk of the least favorable outcome of events. For the foregoing reasons, it was established a mechanism of relations and criteria within corporations that define the need for compliance with legal, ethical rules and standards of conduct, which helps the management structures of the company to run business in line with defined principles of corporate governance and investors to invest based on the evaluation and assessment of experiential and expert-defined criteria of business organizations.

The quality of institutions is an important component in the effective functioning of markets. Market activities involve the interaction of people, they exist to reduce the risk of uncertainty arising due to incomplete information about behavior of other individuals. Institutions can act through a number of channels: reduce informational asymmetries channeling information on market conditions, products and participants; reduce risk by defining and implementing property rights and contracts; restrict the activities of politicians and various interest groups, making them responsible citizens. Therefore, institutions exercise an important influence on economic activity. In addition, strong financial institutions are the foundation of successful capital markets and, ultimately, wealth creation and a healthy economy. A lack of effective financial institutions has disastrous impact on the economy and social costs of countries.

Research studies of numerous authors have undoubtedly confirmed the importance of institutions for the functioning of all spheres of a socio-economic system and can be classified according to:

- Degree of formality,
- Different levels of the hierarchy, and
- The area of analysis.

As regards the degree of formality, there are different formal and informal institutions. Formal rules are supported by written and unwritten rules of conduct. Formal rules and constraints stem from the Constitution, laws, property rights, contracts, statutes, regulations and decrees of implementation. Informal institutions often facilitate transactions and may be of much greater importance in poor countries, where formal institutions are underdeveloped. Informal rules are traditions, customs, cultural values, modifications of formal rules and socially sanctioned forms of behavior.

Institutions at different levels of the hierarchy are interconnected, whereby there is interaction between the different levels. At the first level there are institutions that are related to the social structure of the society, such as social norms, customs and traditions. At the second level there are institutions that establish the rules of conduct and define the property rights and judicial system of the country. Institutions at the third level are associated with the management, while the fourth level institutions are related to the mechanisms of resource allocation, such as controlling the flow of capital, trade liberalization, and the implementation system of social security.

Economic institutions are the rules that define the production, the processes of allocation and distribution of products and services, including the market. Political institutions include variables that ensure elections, electoral rules, type of political system, party system and determine the political stability of a country. Legal institutions define and enforce property rights and legal sources. Social institutions cover the rules of health, education, social security, and the security of regulating relations among economic participants in general.

Institutional infrastructure

The notion of institutions could be represented by several elements, such as formal and informal rules of behavior, ways and means of implementing these rules, procedures for conflict mediation, sanctions in case of violation of rules, and organizational support of market transactions. Institutions [4, p. 13] may be more or less developed depending on the quality of these various features. They may create a favorable environment or destroy incentives for individuals to engage in the production, trade, and investment. Besides, institutions may encourage investment in research and development, and provide a basis for economic progress.

Institutions of corporate governance can be defined as the rules governing the control of company resources. They include traditional corporate governance mechanisms, institutions of markets for goods and services (the regulators responsible for competition), labor market institutions, capital market institutions, financial intermediaries, and the judiciary.

The aforementioned set of institutions affects growth and development in a country [6, p. 48] by creating conditions for the inflow of investments, integration into international trade flows, capital increase, greater political stability, more efficient ethnic conflict management, and implementation of other policies. The system of corporate governance in a country embodies formal and informal rules of behavior, enforced practice and mechanisms of the law, both public and private, which interact and act as an efficient tool of control of corporation ("corporate insiders") on the one hand, and of all other actors that might be interested to invest in a corporation, on the other. It is widely accepted that the companies that are well managed and whose shares are actively traded can attract more investment inflows from investors, who do not have a significant role in the control, at significantly lower costs than the ones that are poorly managed. The reason lies in the fact that potential investors require a higher risk premium when investing in companies that are poorly managed. This enables the efficient allocation of resources in the economy.

Entitlement to dividend could be seen as a legal substitute for the weaknesses of other types of protection of small shareholders. The countries with the "common law" systems provide shareholders with the strongest legal protection, while the countries with French "civil law" system grant the weakest legal protection to investors.

Economic performance of companies depends on the mechanisms of corporate governance, i.e. the legal protection of shareholders, ownership structure, identity of large owners, decisions that can be made at the general meeting of shareholders, corporate organizational structure, composition of management and supervisory boards, management participation in equity, competitive position and financial policy of a company. Legal stability of a country and institutional development are the preconditions for the right functioning of corporate governance and capital market. In the context of transition, it is necessary to ensure the compatibility between the model of privatization and regulation of capital markets [16, p. 31] which, with an effective practice of investor protection in place, leads to the development of capital markets, lower cost of capital, as well as to the growth and development of privatized companies. There are also monitoring costs incurred by the principal, the agent's spending limit, and residual losses. The cost of the principal due to the monitoring does not include only the costs of monitoring and evaluation of agent's behavior, but also the cost of the entire effort of the principal put in the control of the way in which the agent manages corporate resources, compensation policies, policy enforcement, and other activities. The divergence between the interests of the principal and those of the agent occurs when monitoring costs increase due to the need to limit unnecessary costs of the agent.

Namely, the agent will be paid to use the funds (to limit the costs) if he can guarantee that he will not take any action that may be harmful to the principal. Residual losses are actually lost potential benefits because it is not feasible to provide a perfect incentive in the circumstances where it is impossible to observe the activities of agents. The owners of corporations use different mechanisms of control or management in order to limit the discretion of managers. The economic literature identifies internal and external control mechanisms of corporate governance.

(1) Internal mechanisms are networked in the organization and distribution of corporate power and relate to ownership structure as well as management/executives structure.

(2) In addition to internal, there are stronger external influences that can motivate managers to act in the interests of shareholders. These are external mechanisms [25, p. 150] monitoring the capital markets and legal and institutional system of a country. Market competition, for example, leads to the elimination from the market (bankruptcy) of the companies whose managers do not operate in the interests of corporation. These managers lose their jobs. Discretionary behavior of managers will be limited by the action of an active market for corporate control. If managers start to act discretionary, the company's stock price will fall, which will lead to takeover of the company and thus to the replacement of inefficient management. Consequently, while managers can maintain a considerable autonomy in day-to-day operations of the company [22, p. 13], the stock market restricts their behavior. If the equity of the firm is concentrated in the hands of a few investors, each will have sufficient private incentives to invest in information gathering and monitoring of management. In addition, a large percentage share in equity opens up the possibility for increasing control over management through two mechanisms: voting rights, and certain rules and competent regulatory body able to adequately interpret and enforce legal rules. *Regulation is efficient way to protect property rights.* While the costs of signing these contracts are equal to zero, individuals do not need the law because they will always have an interest to negotiate. However, the literature provides a clear framework for thinking about contracts, which raises many important issues such as international corporate governance and privatization. However, the real question is how to enable the private sector to enter into effective contracts in an easier manner. This can be achieved only by clear legal rules that will become a support to capital and other markets [20, p. 17]. *Strong legislation is an important prerequisite for good corporate governance.* Effective institutions reduce transaction costs, introducing the idea of the firm as a legal form that consists of the sets of contractual relationships between individuals, aimed at minimizing the agency costs incurring as a result of conflicting interests of shareholders and managers. Principals (shareholders) are taking risks, transferring the right to decide to agents. However, shareholders have complete freedom to sell their shares without any obligations to other owners, which results in more effective management control (there is competition within the firm and out of it). This situation is actually a justification for hostile takeovers, or "market for corporate control". The importance of this approach is that before them it was impossible to see a fundamental difference between corporate governance and management based on common agreements. Agency theory deals with the role of ex ante incentive alignment mechanisms in reducing agency costs incurring due to moral hazard problem and the possibility of preventive action. *Quality of institutions is an important component of efficient markets.* Market activities include human interaction; they exist to reduce the risk of uncertainty that is caused by incomplete information about behavior of other individuals. Institutions can operate through numerous channels: reduce information asymmetry channeling information on market conditions, products and participants, reduce the risk by defining and implementation of property rights and contracts, limiting the activities of politicians and various interest groups, making them responsible citizens. Therefore, institutions

[14, p. 31] exert a significant influence on economic activity. In addition, strong financial institutions are the foundation of successful capital markets, and ultimately create wealth and a healthy economy. The absence of effective institutions has a disastrous financial impact on the economy and the social costs of countries. The institutions of corporate governance can be defined as the rules governing control of corporate resources [26, p. 43]. They include traditional mechanisms of corporate governance, markets for goods and services (regulators responsible for competition), labor market institutions, capital market institutions, financial intermediaries and the judiciary.

Such a set of institutions affects the growth and development in a country, while creating conditions for attracting private investment, integration into international trade flows, capital increase, lower level of political instability, more efficient ethnic conflict management, and implementation of other policies. System of corporate governance in a country consists of formal and informal rules of conduct, adopted practices and implementation mechanisms, whether private or public, which mutually interact and enable the control of corporations ("corporate insiders") on the one hand, and all others who may invest, on the other.

However, many authors conclude that empirical findings depend on selected research methodology. At the same time, they emphasize that the theory of corporate governance is underdeveloped. The existing theory of corporate governance is a collection of partial hypotheses that individually express the variables. There is little debate on how to operate a wider set of interaction mechanisms that would be relevant variables for two-way causality, and how the balance of an optimal set of corporate governance mechanisms could look like. Corporate governance mechanisms are presented in Table 1.

Regional cooperation and harmonization of national legislation

The process of harmonization [23, pp. 123-141] with the EU acquis must include the following steps:

1. Defining the areas of the EU legislation and the list of EU regulations with which it is possible to harmonize national legislation;
2. Making a list of relevant domestic legislation;
3. Determining the degree of compliance of existing national legislation with the EU as set out in the first phase;
4. Designation of competent authorities for enacting new or amending existing national regulations whose inconsistency are detected in the previous phase;
5. Prioritization, dynamics, and other issues related to harmonization;
6. Preparing harmonized domestic legislation, including the translation of the acquis communautaire.

Table 1: List of corporate governance mechanisms

CORPORATE GOVERNANCE MECHANISM	
INTERNAL MECHANISMS	EXTERNAL MECHANISMS
1. *Shareholders* • The concentration of ownership; • Insider ownership; • Role of large blockholders; • Issue of protection of minority shareholders; • Struggle for representation, type of the owner, shareholder activism, lawsuits and litigation.	1. *Regulatory framework* • Legal and institutional system of the country; • Stock Exchange; • Securities Commission; • Legal framework, judicial system, public sector.
2. *The Board of Directors* • Board structure (one-tier or two-tier board); • Activity board; • Board independence; • Board size.	2. *Market supply of corporate output* • The market for corporate control; • Labor market; • Competition on the markets, hostile takeover, the threat of bankruptcy.
3. *Management* • Building a manager's reputation; • Fiduciary duty of manager; • Manager market; • Internal competition of managers; • System of compensation.	3. *Other external mechanisms* • Market intermediaries (brokers and investment advisers); • Business associations; • International institutions; • Media and social control; • Rating agencies.

Source: [3], [5], [22], [19]

In some countries outside the EU was made, or is in progress, the voluntary harmonization of national legislation with the EU. This process is characterized by the following factors:

- Optional character,
- Harmonization goals,
- Partiality,
- Fragmentation, and
- Gradual path.

Harmonization of the legislation of Member States relating to the integration of the domestic economy into the EU common market can be made by taking a positive and negative approach that are also referred as "positive and negative harmonization". The realization of positive integration consists in adopting the EU rules that are applicable in a uniform manner across all Member States. At the level of the common state, these pertain to regulations/ordinances. As regulations have direct effect or immediate applicability, their uniform application leads not only to compliance, but also to full compliance. Hence, in the theoretical sense regulations are not considered as a means of harmonizing the legislation of Member States, but rather as a means of standardization, and with the application do not transform into harmonized national legislation, but remain unified supranational regulations.

The theoretical literature cites the following methods of harmonization: harmonization by establishing uniform rules at the EU level, full harmonization, optional harmonization, partial harmonization, minimum harmonization, alternative harmonization, mutual recognition of regulations, compliance checks through the recognition of the right of verification by other Member States and the harmonization of standards.

Economic development after the creation of the EU is characterized by two processes that occur simultaneously:

- Harmonization of the national legislation of EU Member States, and
- Creation of specific business entities.

The process of harmonization of national legislation in the field of business activities is conceived as the process of creating legal norms in line with the EU legislation. Harmonization of national legal norms related to business activities has been carried out in two directions:

- The countries have an obligation to apply harmonized regulations within their territory,
- Non-EU countries can voluntarily apply the regulations.

Harmonization of national legislation in the EU Member States is realized through the adoption of legal regulations enacted by the EU authorities, such as the Directive on Capital, Directive on Structure of Joint Stock Company, Merger Directive, and other directives. Harmonization of national legislation with the EU has been taking place gradually, and it is still underway and depends on the existing legal, economic, and overall social infrastructure.

Harmonization [24, pp. 357-368] of national legislation with EU regulations is aimed at improving the chances of a country to become a member or to speed up the integration process. Harmonization of national legal regulations with the EU acquis (*acquis communautaire*) is a precondition for joining the European Union. It is a complex and lengthy process, which requires not only of the adoption of new laws and amendments to old laws, but also their enforcement. These imply the education of regulatory bodies, modernization of the judicial system, and provision of adequate information to the public, and especially to business community, public administration, and the judiciary. The speed of legal harmonization depends upon the speed of the entire European integration.

Lately it has become evident that the state is seriously engaged in creating more favorable loan terms and conditions for the companies. The processes of registration and creating records of real estate are in progress and the Business Registers Agency has established the Register of Pledges. It is expected that, as was the case in some countries in transition, these initiatives will help companies to get easier access to bank loans.

The European Union has adopted the Financial Services Action Plan, which is aimed at creating a single financial market and, in this respect, points to two priorities: a) adoption of the Directive on taxation of savings income in the form of interest payments, and b) change in the adopted (1997) Code of Conduct for Business Taxation. Other proposals include: improvement of the Prospectus Directive on issuing securities or other investment services, updating the accounting regulations of financial institutions, adoption of the Directive on cross-border use of collateral, the Agreement on the merger of financial institutions, Investment Funds Directive and Pension Funds Directive.

In the retail banking there is a need to adopt directive which would regulate the "distance selling" of financial services, to improve the system of information on mortgage loans and form the opinion of the EU Commission on the e-commerce in financial services.

One of the most important laws that Serbia doesn't have yet is the Antimonopoly Law, or the Law which stipulates antimonopoly behavior of businesses and individuals in our market. We believe that its enactment would prevent further monopolization in the Serbian economy, which is already at its peak, but none of the authorities has thus far decided to publicly disclose the facts and propose solutions.

In the area of prudential supervision of operations it is important to adopt the Directive on the winding-up of banks and insurance companies, on the treatment of "electronic money", as well as to amend Anti Money Laundering Directive and Rules on the supervision of financial conglomerates.

Regulatory regime on foreign capital flows is based on a set of rules. The most important are: Law on Foreign Investment, Law on the Market of Securities and Other Financial Instruments, Insurance Law, Law on Credit Relations with Foreign Countries, Foreign Exchange Law, Law on Payment Transactions, and Law on Investment Funds. Regulatory regime on foreign capital flows is complemented by a number of other regulations, such as the Law on the National Bank of Serbia, Law on Banks and Other Financial Organizations, Insurance Law, and the like. After more than a decade of transition process, Serbia has largely succeeded in introducing the key legal and economic institutions of the market economy. Current efforts to improve corporate governance practices make an essential aspect of the transition process, as they are directed toward the crystallization of the legal and regulatory framework, building of trust vis-à-vis domestic and foreign investors, and strengthening of financial markets and banking system.

Practices of corporate governance are of crucial importance in the banking sector. It is well known that banks operate on the basis of allocation of excess savings of the population toward the most profitable activities of companies. The problem in the functioning of banks in transition economies arises from the lack of objective information and adequate monitoring due to loose mechanisms of corporate governance. If banks decide to give the loans to companies, then risk premium is attached to interest rates, which causes their astronomical increase. Such high interest rates significantly stifle business activity. What increases the risk for the banks is undefined ownership interests in the area of real estate and, as a consequence, problematic collaterals, but also slow collections of accounts receivables from the companies in bankruptcy. The entry of foreign banking competition has not led to a significant decrease in interest rates, but has established a great deal of discipline through the introduction of hard budget constraint due to the threat of bankruptcy.

Joint stock companies that are under control or significant influence of the state often delay the process of restructuring and the introduction of new corporate governance practices. These businesses are suffering from the lack of transparency of important transactions, which is often associated with a breach of the rules on conflict of interest and protection of competition. Finally, a main problem for these companies is a weak system of accounting and auditing, which in the past allows the outflow of large amounts of funds in the accounts of companies' related parties.

However, regardless of advanced legislation, the inefficient enforcement of existing regulations is a major flaw of the Serbian economy. There are many reasons, but the most glaring one is the absence of trained and experienced judges in the area of the company law. We should not ignore the problem of corruption. The Commercial Court, which deals with commercial disputes, is considered as one of the most untransparent and most corrupt institutions in the country. According to several international institutions and non-governmental organizations dealing with the investigation of corruption, Serbia is ranked among the most corrupt countries in the Balkans. According to reports by Freedom House, score for the last several years showed a high presence of corruption, and most importantly, it was somehow worse than the average score for the Balkans region, which is known for its weak institutions and high corruption (see Table 2).

Table 2: Ratings of corruption in Serbia and the average score for the Balkan region

Year	2007	2008	2009	2010
Score for Serbia	5.25	5.20	5.00	5.10
Average for Balkan region	5.04	4.86	4.97	4.93

Source: Transparency International

In addition to corporate law, there are two areas that are also important for the regulation of corporate governance: regulation on European Company (*Societas Europaea*) and financial services regulation, as well as voluntary regulation – in the EU countries there are a number of codes of corporate governance adopted by various institutions, professional bodies, and voluntary associations[1].

We will present the analysis of the state of corporate governance in Serbia by using the structure of the OECD Principles of Corporate Governance [20]. The analysis is conducted for the four distinct areas:

1. Transparency and disclosure,
2. Rights and equal treatment of shareholders,
3. The role of other stakeholders in corporate governance, and
4. The responsibility of the Board of Directors and its members.

Clarity and openness are perhaps the weakest point of corporate governance in Serbia, despites the high level of legal requirements in this area. Namely, the Law on Business Companies, the Law on Securities and Other Financial Instruments, regulations of financial markets regulators (Central Registry, the Securities Commission of the Republic of Serbia and Belgrade Stock Exchange) very precisely describe the content of the financial statements, and the time and place of their presentation. In addition, the Law on Business Companies (Article 290, Paragraph 4) provides that the Annual General Assembly of Shareholders decides on the adoption of the company's annual financial statements including reports of the board of directors, auditors, and supervisory board.

Stock exchange listing requirements prescribe that companies should update any information relevant to transactions of their shares and disclose it on the corporate website. Also, companies may send via e-mail important notice to all interested stakeholders. It is necessary to make visible information such as ownership structure, list of board members including a brief biography for each member, collective remuneration and individual compensation packages of board members, relevant reports and proposals for the shareholders' meeting.

Annual reports of companies should be more thorough, some countries even have separate annual reports on corporate governance. It is necessary to increase the internal pressure on the company's management to provide accurate and relevant information and clarification regarding projections, financial data, key risks, and important transactions.

The market for corporate control

There are different activities that could be associated with the market for corporate control and they cannot be easily classified. Many different strategies can be divided into offensive and defensive. Offensive strategies are oriented toward takeovers of other companies, while defensive strategies are based on anti-takeover measures. The offensive strategies are focused on three types of activities. Acquisitions and the combining of companies or mergers where there is a voluntary association of two or more companies through arrangements and agreements between managers and owners of interested companies. The essence of a hostile takeover is that one company buys on the stock exchange the shares of another company against the will of its owners. This kind of acquisition can be conducted in several ways. One of the most common approaches is through a tender offer where the acquiring company makes a public offer at a fixed price above the current market price. Thereby it attempts to acquire a controlling stake and take real control over targeted company. Proxy fight is a mechanism whereby the minority group in the General

1 The European Commission believes that there is a high degree of convergence between the national corporate governance codes and practices, and that there is no need for a single European code.

Assembly is trying to win the votes of other shareholders in order to take control.

The capital market is an important external disciplinary mechanism of managerial behavior. The market price is formed based on all available information on corporation and it reflects the results of the corporation's operations and management performance. So when the management runs the company's operations inefficiently, the share price decreases, since the information about fading performance encourages existing shareholders to sell their shares and seek investments that will generate a higher return. In this way, the owners of the corporation actually vote on the quality of management (management corporation) [1, p. 21], and through buying or selling of shares express their confidence or distrust in the future performance of the corporation.

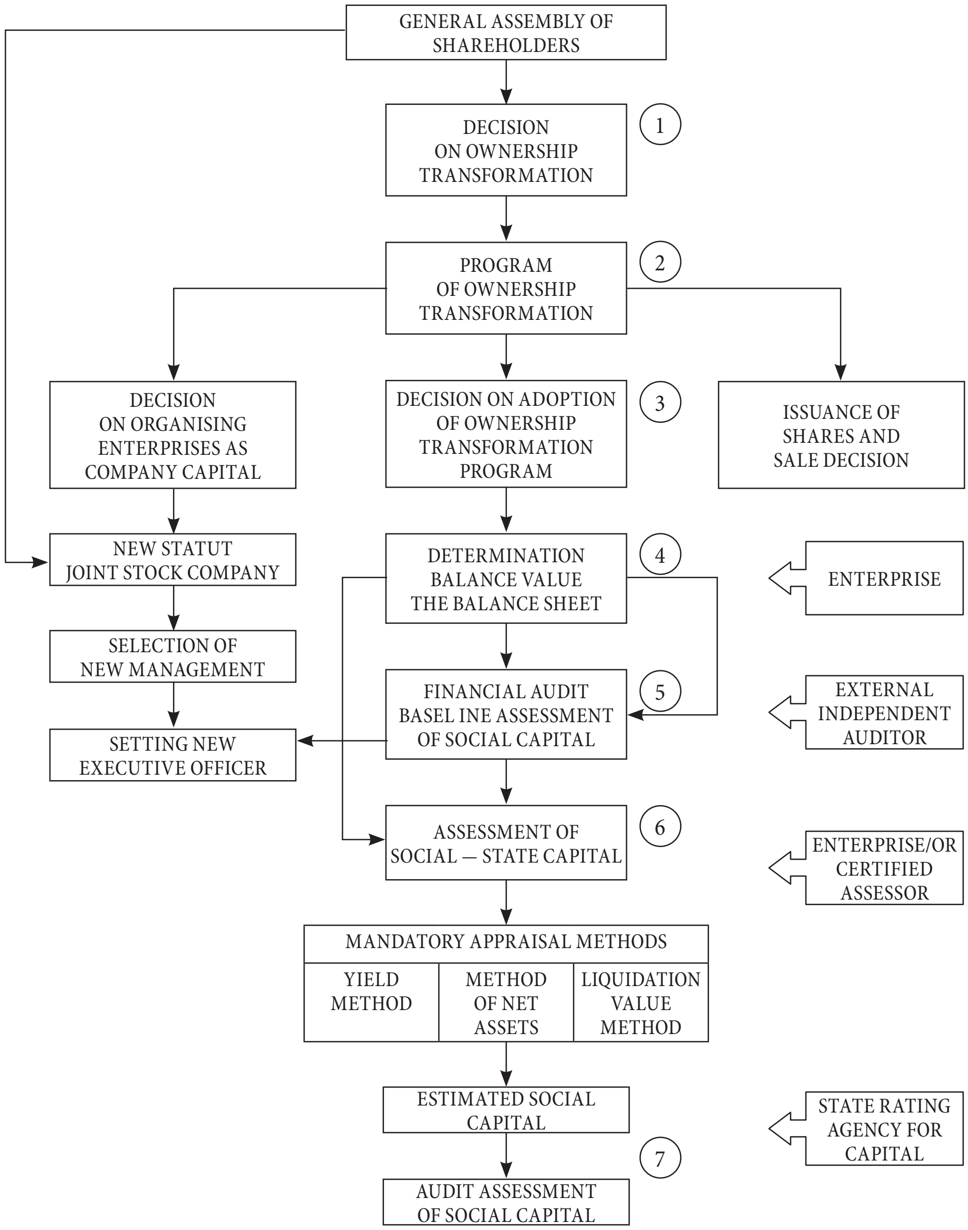
The market for corporate control should be allowed to function in an efficient and transparent manner [22, pp. 7-11]. This means that all the rules and procedures governing the acquisition of corporate control in the capital market should be transparent, as well as share prices, so that shareholders could agree to sell shares in the time of offer, not after the completion of the takeover process when it is possible to sell the shares at higher price. This kind of acquisition requires the developed money market in which the attacker can collect large sums of money for the action of hostile takeovers. Moreover, the board of directors and management of the company often have at their disposal a number of different techniques of defense against a hostile takeover, which are carried out mostly at the expense of shareholders' assets. Also, lobbies representing managers often succeed in getting legal restrictions. The market for corporate control is the main mechanism of reducing agency costs in the outsider system of corporate governance.

If managers demonstrate discretionary behavior (i.e. pursue their own interests and not those of the principal) the company's share price will fall and the company will become the target of a hostile takeover. In order to take control of such a company, by purchasing shares the attacker (acquirer) actually buys two types of rights: the majority of cash flows rights and control rights. However, hostile takeover usually leads only to temporary concentration of cash flow rights and control rights in the acquired company. Following the replacement of inefficient management, the acquirer can resell a part of cash flows rights, because the ownership concentration requires additional costs. In this case, the acquirer will achieve a higher selling price if, in addition to cash flows rights, they also sell control rights in the firm. This means that, according to the dispersion strategy, after replacing inefficient management and temporary concentration, hostile takeover would again lead to dispersed control. The market for a hostile takeover functions as a threat to inefficient management because the attacker does not indemnify the inefficient management, but instead takes control of the corporation, paying to shareholders the value of company. The process of a hostile takeover is very costly due to high transaction costs associated with the resistance pressures, which reduces the tendency of potential attackers to take over. Self-interest activities of managers are determined by all of these inefficiencies. Thus, the management could accurately determine the level of inefficiency of their engagement in favor of shareholders (that would provide personal benefits), which equals the amount of takeover costs borne by the attacker. In this manner, managers maximize current private benefits without the threat of takeover as long as the attacker becomes able to make a profit from the takeover.

Another important prerequisite for efficient markets [7, pp. 232-258] for hostile takeover is high standards of information disclosure, which enable the efficient evaluation of share prices and activation of the market for a hostile takeover once the attacker spots inefficient management and sets goals that can be achieved through a hostile takeover. The decline in the cost of capital is the primary goal of corporate governance. The market for corporate control has contributed to the survival of the corporations, despite restrictions imposed by investment, finance, and management decisions on the payment of dividends.

Market competitiveness of the products (i.e. output) of corporations affects their positioning, and directly leads to the failure (bankruptcy) of companies that are unable to meet the market demand. Therefore, many studies have relied on sales growth in a given time period to measure the success of the corporation. Besides, the

Figure 1: Process chart of ownership transformation



Source: Author

competition in the product market acts an important factor in imposing discipline to managers that show poor performance, although the time frame for the assessment of this mechanism is very lengthy.

Therefore, the promotion of competition in the product market provides long-term solution. The impact of this mechanism in ensuring discipline of corporate governance depends on the government's activities to improve the competitive environment in the country, which would create the conditions for the strong competition in the product market to act as a disciplining mechanism that reduces agency costs. Ability to repay debt and credit rating according to rating institutions that evaluate the credit worthiness of corporations give investors strong signal about the quality of corporate governance. The best-known agencies that offer this information are Moody's and S&P. While investing in international capital markets, many investors are guided by the estimates of these agencies.

World-renowned rating agencies publish a variety of indicators that measure the quality of corporate governance. The indicators are mostly based on similar characteristics and determinants of corporate governance. Since the end of 2002, Standard & Poor's has published Corporate Governance Score (CGS), which assesses the policies and practices of corporate governance and provides information on the achievement of the financial interests of stakeholders of the company, focusing on the interests of shareholders. Aggregate CGS is calculated based on the synthesis of the OECD guidelines and other international codes and guidelines for good corporate governance and four individual components (ownership structure, rights and relationships among financial stakeholders, financial transparency with disclosure, and board structure) [10, pp. 16-19]. Corporate governance is defined as a system that includes the interactions between the company's management, board of directors and financial stakeholders (shareholders and creditors). This approach primarily focuses on the financial dimensions of corporate governance, and leaves out non-financial stakeholders. CGS indicator consists of four areas: (1) Ownership structure; (2) The rights and relationships of financial stakeholders; (3) Financial transparency and information disclosure; (4) The structure and functioning of the Board. Aggregate CGS ranges from CGS-1 (the lowest value) to CGS-10 (the highest value). This analysis relates to the risk management in companies and does not consider the legal, regulatory and market systems of individual countries. It is assumed that the S&P CGS is comparable on a global basis, because it reflects current management practices of companies, laws, market conditions, etc.

An important external mechanism of corporate governance is a constant threat of bankruptcy of the corporation, which puts pressure on the managers of corporations to do business responsibly. The threat of bankruptcy arises if managers choose the wrong business policy (most frequently transfer control to creditors) and is considered as one of the main external mechanisms of corporate governance.

Concentration of ownership (see Figure 1) is generally analyzed according to two different contexts: whether the cash flow and voting rights are identical or voting rights exceed cash flow rights. The second scenario, in which voting rights exceed cash flow rights, poses a serious problem typical of developing and less developed countries. No management system solves this problem efficiently. It seems that market surveillance is not effective and that the solutions depend on the law on business companies, domestic and international product markets and improvement of international capital flows. How does the concentration of ownership affect corporate governance? In low-income countries and underdeveloped institutional environment there is a tendency toward highly concentrated ownership. Large firms that are controlled by management and owned by different groups of small shareholders are the exception rather than the rule. There is a link between ownership structure and the quality of institutions, where the ownership concentration aspires to become a substitute for weak legal protection. Concentrated ownership allows investors easier access to information, control of operations, and provides assurance that the resources will be used in their interest. In countries with higher income levels and stronger legal protection of shareholders ownership is more dispersed. However, this is not the case in all developed countries. The major advantage of highly concentrated ownership is the motivation of shareholders to monitor the management of the company. However, with concentrated ownership, problems occur between different types of investors and minority and majority shareholders. For example, a study of firms in the East Asian economies found that the market accords higher value to the companies whose controlling shareholders have a higher share in equity. With higher equity share, the controlling shareholder wealth is more directly linked to the performance of the company. Comparative analyzes also provide evidence that investors are willing to pay more for the assets when, in addition to controlling shareholders, there is better legal protection. Legal protection makes it easier for companies to access external finance for investment projects. The potential negative effects of concentrated ownership can be reduced by introducing competition in the market and providing an exit strategy for the companies with negative performance.

In both of the described systems of corporate governance shareholders gain the right that consists of two parts. First, the investor is entitled to the profit generated from the rise of the company's share price, or cash flow right. Second, the shareholder has the right to control the business, which is achieved through voting rights (control rights). The level of concentration of these two types of rights among shareholders points to significant differences between the two systems of corporate governance. In countries with outsider system of corporate governance (AS), dispersed ownership is dominant ownership structure in most companies. This dispersion refers to the rights of the owners to the company's cash flow (cash-flow rights) and the right of management control (control rights). In these countries, the rule "one share, one vote" is dominating principle, which is used in corporate governance as an instrument of the distribution of control rights among shareholders.

Management responsibility in the public sector

Monitoring of the management responsibility system in the public sector is the basis for an independent auditing of the public sector, whether it entails external or internal audit. The management responsibility system in the public sector rests on the accountability of state officials in organizing legally-based, regular and timely collection of public revenues, as well as on an adequate and legally-established disposal of public funds. The public sector accountability is monitored and controlled through the budget adopted in line with legal requirements and appropriate budgetary accounting systems and records that contain the systematized information on all budget revenues and public expenditures.

The main instruments of the management accountability control in the public sector are financial statements that are prepared and presented periodically and annually in accordance with the legal requirements and under authority [2, p. 31] of the Parliament of the Republic of Serbia, the Assembly of the Autonomous Province of Vojvodina, assemblies of cities and municipalities, assemblies of public funds, and other state and public agencies and organizations.

The State Audit Institution (SAI), an independent body of the Government, on behalf of the National Assembly of the Republic of Serbia checks the accuracy and reliability of submitted financial statements and notifies the National Assembly and other Assemblies of the degree of competence in the presentation of financial reports.

The responsibility of agencies and organizations in the public sector is under greater scrutiny than the responsibility that is required in the private sector. There are a number of reasons for this, most of which are based on the fact that the regular and timely collection of taxes and other public revenues is in the public interest, not in the interest of individuals. On the other hand, the ministries and other state bodies provide services that are intended for the population as a whole, not individuals. The users of public services cannot go elsewhere and buy the same service if they consider not having obtained the right value for their money, so it is necessary to establish the accountability mechanisms for public service providers which will ensure the right regulation and spending of public funds. Public sector organizations that offer direct services to individuals, such as water supply or electricity distribution, are usually monopolistic organizations that do not give consumers more choice, although a portion of their financial resources comes from tax payers through appropriate subsidies from the budgets of municipalities. In these circumstances, although the ultimate responsibility should be, and most often is, toward consumers, in practice it is usually directed to the Assembly of the Republic of Serbia, the Assembly of the Autonomous Province of Vojvodina, assemblies of cities and municipalities, depending of relevant legal jurisdictions.

The function of state auditor in the process of evaluating accountability in the public sector is performed by an independent audit agency [12, p. 7]. There is a significant difference in evaluating the responsibility of managers (officials) in the public sector depending on whether it is based on external or internal auditing [18, pp. 27-31]. The reports of an external, independent state audit agency are directed towards political bodies outside the organization, while internal audit in the public sector should serve as a tool of the company's management. Therefore, external audit will be conducted by the SAI that is completely independent of the Government and ministries and represents the Assembly in carrying out an independent review of financial statements prepared and presented by individual ministries. External Auditor is responsible to the Assembly.

According to international standards of the public sector auditing, the internal auditor of the public sector is an integral part of the ministries, public administration bodies, public funds or public companies, and acts as a representative of minister, provincial secretary, mayor, and the management of public funds or public companies. The internal auditors in the public sector should be held accountable for their work to the minister, provincial secretary, mayor, chairman of the board of public fund, chairman of the board of health care institution, or chairman of the board of directors of a public company.

Specifics of public procurement contracts

National investment plans and programs are very important in every country, and especially in the countries in transition. The nature and scope of investment in individual development projects require the provision of all necessary funds from relevant sources, such as budgets, domestic and international loans, donations and other funding sources.

Determined and approved investment programs are implemented by signing a series of contracts between the state, state agencies or other organizations designated by the state, with a corresponding credit institutions, i.e. banks in the country and abroad, as well as between the state, public funds or organizations designated by the state (for example, the Development Fund and the like) and program administrators, service providers and other suppliers of material goods. Then, there are agreements between the state or the representatives of the appointed government bodies and construction supervisors who on behalf of investors oversee and control the execution of contracted projects and other contracts related to intermediary and similar services. As a rule, development plans and programs have long-term character, so they are divided into shorter intervals to facilitate their effective monitoring, registration, analysis, and verification. In the implementation of "state" or investment contracts, i.e. the contracts which are related to the realization of investment plans, there are frequent setbacks due to inefficiency, budget overruns, financial losses, fraud, theft or damage to inadequately secured equipment or works, and various other financial frauds, corruption, etc.

The audit of public contracts (government, investment, etc.) is a very important area in the public sector auditing [8, pp. 7-9]. The main objective of the audit of public contracts is the prevention of possible losses, damages and any other potential illegal use of approved funds [21, pp. 9-14]. An audit of public contracts begins with the audit of investment programs and legally-established funds and sources of finance for the project, then continues with the monitoring of all stages following the conclusion of the contract, certain stages during the implementation, to the completion and handover of the project. It is not enough simply to examine payment orders and check their accuracy and balance in the accounting documents. Large expenditures during the implementation of investment contracts, various technical aspects and the like, determine the choice of the audit approach based on the evaluation of the entire system in order to detect whether all the provisions of a public contract are duly executed, in the most cost-effective, effective and efficient way. Audit approach based on the evaluation of the entire system and assessment of the fairness in public procurement processes involves three main phases:

1. Phase preceding the contracting phase,
2. Contracting phase, and
3. Phase after the execution of contract.

Approach to auditing of all types of contracts related to the procurement of services, construction of buildings, and other projects is universal no matter of the fact that it takes place in different organizations, with different technologies and other individual specifics. This approach should include the following:

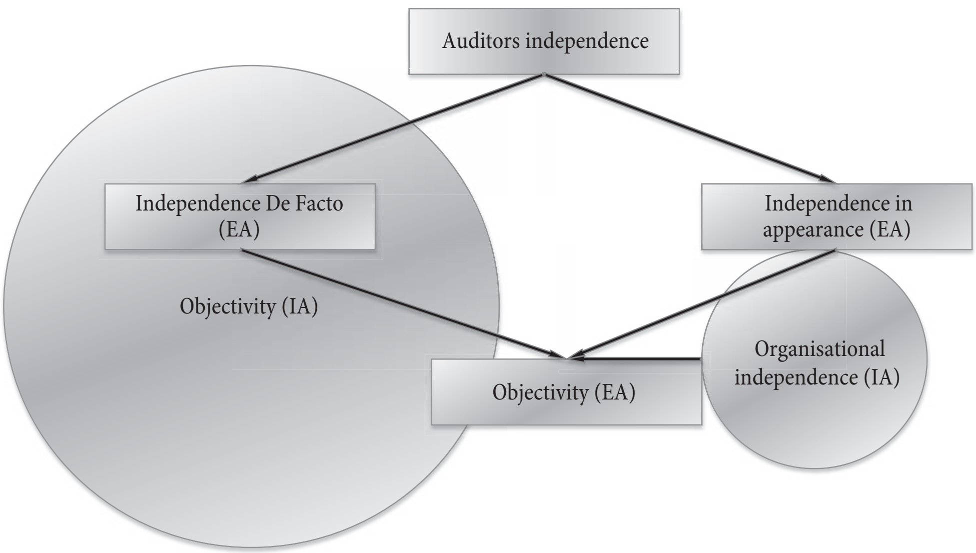
- Determining the adequacy of budget items relating to specific contracts and ensuring the conditions for sufficient provision of necessary financial resources for their implementation;
- Review of the compliance with established policies and procedures related to the implementation of public procurement contracts and general rules regarding the construction of buildings and other investment ventures;

- Monitoring the functioning of the internal control system based on a continual revision of the implementation of contract (keeping construction records and building log, the system of licenses required for the approval of procurement, payments from the project budget);
- Checking the timeliness and accuracy of information on the implementation of contract;
- Controlling the effectiveness of the accounting system in the area of registration of used resources, including all employees on the project;
- Following up the activities of engaged consultants, supervisors and other service providers involved in the project;
- Detection of losses, overdrafts, and other inefficiencies in the work, to enable the realization of project within planned time frame and costs.

The existence of large state budget deficit, which characterized the first decade of the 21st century, indicates a lack of effectiveness in the monitoring of public finance. Consequences of the weaker independence and objectivity of external state auditors, as well as internal auditors, in the public sector have led to an increase in irregularities in the management and deployment of public funds by the direct and indirect budget users, irrational use of public assets, all-present phenomenon of corruption, misappropriation of public property and other criminal activities. The practice that particularly contributed to this outcome is an uncontrolled increase in the administration in the public sector, through doubled and tripled functions, which logically caused uncontrollably large budget deficits, and thus strengthened the resistance to regular public monitoring and development of auditing in the public sector. There has been a long-standing resistance of the state administration in the Republic of Serbia to a serious independent control of public finance, starting with deliberate delay in the establishment of an independent state audit institution, then the impeding of the employment of a sufficient number of qualified auditors (the SAI has only 5 independent state auditors), to the opposition to providing the SAI with an adequate office space and other material conditions for the effective control of public finance.

Since the adoption of the Law on State Audit Institution in 2005, the first modest report on the partial audit of a part of the final accounts of the budget of the Republic of Serbian was publicly presented as late as at the end of 2009, for the first year of the audit (2008). The parliamentary debate on this auditor's report, with a numerous qualifications, began in early 2010 and was not completed within a reasonable time according to the international standards and guidelines for the public sector auditing, which calls for an additional attention of the general public. Analysis of the development stage of the public sector auditing in Serbia points to some

Figure 2: Auditor independence



Source: Author

inconsistencies in the implementation of the Law on State Audit Institution. Otherwise, the content of the Law is fully in line with the progressive legal practice in the European Union, and it was expected to bring about a positive trend, and especially the change in the behavior of state officials. Article 3 of the Law precisely defines the status of institution of the SAI as the supreme state body for auditing public funds. Further, the Law provides that the institution is an autonomous and independent state body, as well as the Government. However, the next paragraph of this article points out the fundamental principles of independence and objectivity of an independent state audit as follows: "Enactments by which the Institution performs its auditing competence cannot be a subject of dispute before courts and other state bodies." In this way, the Law has provided complete independence and objectivity of the external auditing of the state (see Figure 2). However, there are significant deviations in the implementation of this Law. Members of the Council of the State Audit Institution, the supreme body of state audit, are elected in the National Assembly, based on the proposal of member parties of the ruling coalition, which means that they automatically become dependent on the parties that have supported their candidacy. In this way, their proclaimed independence and the objectivity of their activities regarding the control of public finance are completely disabled.

Contemporary trends in corporate governance: Lessons for the future

In recent times, a large number of international organizations and institutions have started to study corporate governance. Besides, many nongovernmental organizations, corporations, business and investors associations also explore the relationships within corporations. International institutions dealing with the phenomenon of corporate governance are OECD, World Bank, MIGA, IFC [15, p. 45], International Chamber of Commerce, European Commission, UNIDO, and UNCTAD. According to the report, prepared by the Working Group of the United Nations Economic Commission for Europe, the OECD is considered as one of the most important international institutions dealing with improvement in all segments of corporate governance (institutional, legal and regulatory structure), as well as creating a business environment for corporations. In cooperation with the World Bank, through the organization of the WB/OECD Global Forum on Corporate Governance [9, pp. 17-21], these institutions are engaged in improving corporate governance around the world. The World Bank mostly deals with the issue of implementation of various strategies. IOSCO is an institution which mainly focuses on regulatory aspects, with a special emphasis put on securities. The European Commission is also an important institution that regulates the area of corporate governance across the European Union. Other international institutions, with varying degree of success, mostly deal with specific areas of corporate governance. The main objective of the Organization for Economic Cooperation and Development (OECD) is to, through the Global Forum on Corporate Governance, ensure the improvement of standards of corporate governance and, in particular, their implementations in developing countries and countries in transition, then the development of entrepreneurial spirit, improvement of accounting practice, transparency, accountability and integrity in business. It has been achieving these goals through various forms of political dialogue, convening conferences on corporate governance, and organizing the round tables at the national and regional levels [22, p. 11]. The principles of corporate governance can be applied both in the countries with "civil law" and "common law" legal tradition, at different levels of ownership concentration. The main areas of the research of IFC/MIGA are the development of entrepreneurship and the efficiency of private investment, as well as the creation of favorable business environment. The intention is to integrate environment, corporate and public governance, and to provide that problems in corporate governance do not hamper potential investment. These goals are achieved through the transfer of knowledge by ensuring funding for private sector projects with good corporate governance, research, and consulting services. Therefore, the study of various aspects of corporate governance is in the initial stages of development, with no single international organization covering the area of corporate governance with a completely clear vision and in all its segments.

Summary

The normal functioning of the public sector is adversely affected by the current extremely difficult economic conditions, the global economic and financial crisis, illiquidity, as well as a decline in economic activity and subsequent decrease in the collection of value added tax and other public revenues. Therefore, it is necessary to intensify the efforts toward the establishment of the institution in charge of internal auditing in the public sector in order to ensure more rigorous control of public spending and more dynamic reform of public administration, thus contributing to a faster reduction of the budget deficit.

More intensive control of public finance through organized internal auditing in the coming period will contribute to faster achievement of the country's economic stability and lower degree of social tensions, and ensure that public expenditure will be more rational and more consistent with the need for a faster emergence from the long-term economic and social crisis in the country.

Preserving the market integrity should be imperative for all participants, capital market institutions, economic institutions, various occupations and professions. Upgrading the regulatory framework by detecting and sanctioning inappropriate behavior, as well as providing the education and training in this field, should be a part of regular professional development in state audit bodies, self-regulatory bodies and brokerage firms, and other professionals associated with the capital market. Also, technological development requires a special attention of all market participants due to the fact that it opens up new possibilities of abuse, but also new tools for their timely sanctioning. Continuous education should constitute a mandatory part of the professions of financial market participants.

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DIRECTOR'S LIABILITY FOR DAMAGE HE CAUSES TO THE COMPANY*

Odgovornost direktora za štetu koju prouzrokuje društvu

Abstract

This paper presents the fundamental issues in Serbian law and business practice raised in the context of liability of the director for damage he may cause to the company. The paper thus analyses the rules of the Companies Law establishing specific duties directors owe to the company – duty of care in performing the operations on the one hand and a set of duties that are considered duties of loyalty to the company on the other. In an effort to provide a comprehensive picture of issues which the responsibility of directors may raise, the said rules are analysed both in terms of the specific rules of the Companies Law and in terms of general rules and basic principles of the Law on Obligations and other relevant laws in this area.

Key words: *director, liability, company, damage, indemnification, duty, care*

Sažetak

Predmet rada predstavljaju osnovna pitanja koja se u srpskom pravu i poslovnoj praksi postavljaju u kontekstu odgovornosti direktora za štetu koju prouzrokuje društvu. U tom smislu, u radu su analizirana pravila Zakona o privrednim društvima kojima se utvrđuju posebne dužnosti direktora prema društvu – dužnost pažnje u izvršavanju poslova s jedne strane i skup dužnosti koje se smatraju dužnostima lojalnosti prema društvu s druge strane. U nastojanju pružanja celovite slike o pitanjima koja odgovornost direktora može pokrenuti, pomenuta pravila su analizirana kako sa aspekta konkretnih pravila Zakona o privrednim društvima tako i sa aspekta opštih pravila i osnovnih načela obligacionog prava, kao i drugih zakona relevantnih u ovoj oblasti.

Ključne reči: *direktor, odgovornost, društvo, šteta, naknada štete, dužnost, pažnja*

General introduction

In Serbian law, the general rules governing the liability for damage are contained in the Law on Obligations, which first and foremost proclaims the principle of prohibition of causing damage, and goes on to establish the grounds for liability for damage (liability on the ground of fault, liability for another, liability for loss or injury caused by dangerous objects or dangerous activity, special cases of liability), as well as indemnification, in respect of which it embraces the principle of complete recovery, whereby the injured party is entitled both to compensation for actual damage and to compensation for lost profit.

On the other hand, director's liability for damage he causes to the company is provided separately in the Company Law [2], under the section entitled "Special Duties Owed to Company", comprising three groups of rules relevant to this issue.[1] In the first place, the Law defines the persons owing special duties to the company

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1 Art. 61 – Art. 80, Company Law

[17, p. 141ff.]: partners and general partners; shareholders with a significant holding in the share capital of the company (over 25% of voting rights held either independently or acting in concert with other persons) or controlling shareholders[2]; directors, supervisory board members, representatives and procurators; liquidator, as well as other persons identified in the Memorandum of Association or Articles of Association as persons owing special duties to the company.[3] Furthermore, the Law defines each of the special duties such persons owe to the company – duty of care in carrying out their tasks on the one hand, and on the other, a set of duties considered as duties of loyalty to the company: 1) duty to disclose personal interest; 2) duty to avoid conflict of interest; 3) duty of confidentiality and 4) duty of non-competition. Finally, the Law provides for the rules on filing lawsuits for breach of special duties. The provisions relating to director's liabilities are seen as a strategy towards addressing the so-called *first agency problem, i.e. addressing the conflict between the shareholders and managers* [13, pp. 239-251].

This paper aims to present an analysis of each of the above special duties owed by the director to the company, in terms of their concept, contents and liabilities in case of their breach.

Duty of care

The Law on Obligations adopts the concept of uniform regulation of relations arising from transactions in goods and services, regardless of the status of the parties to such transactions (principle of uniform regulation of obligation relations).[4] This means that the Law provides for the rules that, in principle, apply equally both to the civil-law contracts and to the contracts concluded by business entities engaged in performing business activities – commercial contracts.[5] However, assuming that businessmen are professionals with relevant knowledge and skills in the sphere of business, the Law on Obligations, in certain cases, envisages special rules for commercial contracts, suited to the requirements and specific nature of this type of contractual relations. In comparison with the general rules applicable to civil-law contracts, the rules governing commercial contracts entail greater liability, shorter deadlines and stricter remedies.[6]

As regards the liability for performance, the Law provides that a party to an obligation relation is bound to act with the care which is required in legal transactions in a given type of obligation relations (care of a prudent businessman, or care of *bonus pater familias*).[7] In this way, the Law, whilst defining the general rule of conduct in performance of duties, establishes different standards, depending on the type of the specific obligation relation. These standards imply a lesser or higher level of care as the criterion for liability of the obligor who, in performance of his duties, failed to implement the care required of him in the given type of contractual relation.[8] In each case, the care is evaluated based on the type of person who acts normally with respect to his abilities, knowledge and skills, whilst also taking into account what is typically expected from such person in a specific type of contractual relations. The Law has established *objective* care as the standard, which means that the individual properties of contractual parties are not deemed to be of significance.

In this regard, the parties to civil-law contracts are required, in performing their contractual obligations, to act with the care of a *bonus pater familias* (*reasonable person*). The care of a reasonable person implies a person who acts reasonably and with due care in performing his tasks, managing property and fulfilling his obligations towards other persons. On the other hand, when an obligation relation stems from business activities of the parties to legal transactions, they are required to act with the care of a *prudent businessman*, *i.e.* the care required in business transactions. In addition to the standard care of a reasonable person and a prudent businessman, the Law also provides for the care of a *prudent expert*, which implies stricter, expert and professional care in performance of contractual obligations. Under the Law, a party to an

2 Art. 61, Para. 2-3, Company Law

3 Art. 61, Company Law

4 For more details see [10]

5 Art. 25, Para. 2, Law on Obligations

6 For more details see [7, p. 221ff.]

7 Art. 18, Law on Obligations

8 Please note that the standards apply to all obligation relations, not only to the contractual relations.

obligation relation is required to act with greater care in performance of tasks which fall within the domain of his vocation, in accordance with the rules and practices of profession (the care of a prudent expert).[9] This is a special professional care, required of professionals pursuing a certain line of business. The assessment of this type of care is based above all on the rules of a given profession and fair business practices which are employed in a given professional field, and applicable in performance of a given professional activity.[10]

From the standpoint of general rules of the Law on Obligations, the above rules pertaining to due care bear special relevance for deciding the issue of liability for failure to perform a contractual obligation. In this context, it is important to distinguish between the obligations pertaining to results and the obligations pertaining to means.[11]

The obligations pertaining to results (*obligations de résultat*) are the obligations whose fulfilment implies attainment of a specific goal in respect of which the obligation was created. In this type of obligations, the obligor is deemed to have fulfilled his duties only when specific results, on account of which the obligee entered the obligation relation, have been achieved. To the contrary, if the obligor fails to achieve such results in the course of his performance, he is deemed to have failed to fulfil his obligation, which results in implementation, by the obligee, of legal instruments envisaged in case of breach of obligation (in case of contracts – request for contract performance and contract cancellation), as well as the obligation to compensate the obligee for the damage. Most obligations fall within the group of obligations pertaining to results. Unlike the obligations pertaining to results, the obligations pertaining to means (*obligations de moyens*) are the obligations whose fulfilment does not necessarily imply attainment of the end result in respect of which the obligation was created. In this type of obligation, the obligor is deemed to have fulfilled its obligations if he has undertaken the promised action with due care, regardless of whether or not the results implied in the obligation have been achieved, as far as the obligee is concerned (*e.g.* obligation on part of an intermediary to endeavour to find and connect with the principal a person with whom the principal can conclude a contract, obligation on part of a distributor to make his best efforts to improve the sale of goods of a certain manufacturer, etc). In performing his duties, the obligor is bound to act in good faith and with the care required by certain standards, however, he will not be held liable for damage if the action undertaken on behalf of the obligee has not produced the expected results. For these reasons, the contracts in modern business transactions[12] often contain clauses binding a party to make its best efforts, reasonable care, due diligence in order to perform the contractual obligation.[13] The key criterion in assessing whether or not the obligor has met the contractual obligation is precisely the assessment of the standard of due care, made by the court in each individual case in the light of all circumstances relevant to the given case.

The above distinction between different types of obligations is of vast practical importance. In case of obligations pertaining to results, the obligee does not need to prove the obligor's fault in order to be entitled to damages; he has only to demonstrate that the contractual result has not been achieved by the other party. To the contrary, in case of obligations pertaining to means, the obligee must prove the obligor's fault in order to be entitled to damages; *i.e.* he must prove that the obligor, in a given case, failed to act with due care.[14]

The type of care required of parties to an obligation relation is also important for assessing the degree of fault within the context of subjective liability for the damage caused. The subjective liability[15] is the liability for injury or loss based on the tortfeasor's *fault*. Law on Obligations provides that whoever causes injury or loss to another shall be liable to indemnify it, unless he can prove that the

9 Art. 18, Para. 2, Law on Obligations

10 For more details see comments to Art. 18, Law on Obligations in [11, pp. 43-46]

11 For more details on this classification see [8, p. 90ff.]

12 For more details on modern commercial contracts not regulated by the Law on Obligations see [6, pp.149-167].

13 For more details on these clauses in international commercial contracts see [3, pp. 211-252].

14 For more details see [7, p. 1293ff.]

15 See decision of the Commercial Appellate Court, Pz 1253/2010 (2) dated 22 Apr 2010

damage was caused through no fault of his own.[16] In this way, the Law has provided for a refutable assumption of fault in the area of non-contractual liability for damage, which means that the injured party does not have to prove the tortfeasor's fault, rather the burden of proof rests with the tortfeasor, who has to prove that the damage was caused through no fault of his own. Under the Law on Obligations, fault exists when the tortfeasor has caused injury or loss intentionally or through negligence (gross negligence and ordinary negligence).[17]

Intent (wilfulness), as the most serious degree of fault, exits in cases when the damage was caused intentionally, *i.e.* when the tortfeasor had the intention to cause injury or loss to another and, in general terms, when he acted in a way he was aware would harm another person.[18] In determining the existence of intent, the court applies the subjective criterion, establishing the tortfeasor's individual attributes and circumstances in each given case (*in concreto* assessment). On the other hand, *gross negligence* (*culpa lata*) exists when someone acts with utter negligence and carelessness, disregarding the basic requirements of care and prudence normally expected of a person. In other words, a grossly negligent person is one behaving with wanton recklessness and negligence, dismissing even elementary caution in his acts. In terms of liability for damage, gross negligence equals intent. The liability for intent or gross negligence may not be precluded in advance under a contract.[19] These types of fault are also provided in the Law on Obligations under the section defining the liability of legal entities for the damage caused by their officers or bodies, stipulating that a legal entity is liable for the damage its officers or bodies have caused to a third person in performing or in connection to performing their functions; in which case the legal entity is entitled to recover against the person being at fault for injury or loss inflicted wilfully or through gross negligence.[20] Finally, *common negligence* (*culpa levis*), as a less serious level of negligence, exists with the responsible person, in causing injury or loss, neglected the care of a particularly careful, prudent person. This type of negligence includes behaviour that is not permissible to *bonus pater familias*, prudent businessman or prudent expert. The liability for ordinary negligence may as a rule be excluded under the contract, however, at the request of an interested contracting party, the court may annul the contractual provision on the exemption of this type of liability, where such provision arises from the monopoly position of the obligor or, generally, from unequal positions of the parties.[21]

The general rules of the Law on Obligations concerning the care required of the parties to an obligation relation are also defined in more detail in the area of company law, in the form of rules concerning special duties owed to the company.

Under the Company Law, a director[22] has the duty to carry out his tasks in good faith, with the care of a prudent businessman and in a reasonable belief that he is acting in the best interest of the company. The care of a prudent businessman implies the level of care which a reasonably careful person would use if they had the knowledge, skills and experience that might reasonably be expected of a person performing particular functions in a company. If the director has certain specific knowledge, skills or experience, such knowledge, skills and experience are also taken into account when evaluating the level of care. It is deemed that the director may also base his actions on the information and opinions provided by persons specialised in relevant areas, which he reasonably believes to have been given in good faith in a particular case. A director who proves that he has acted in accordance with these provisions of the Law may not be liable for any damage such conduct may have caused the company.[23]

Several inferences may be drawn from the foregoing rules of the Company Law.

16 Art. 154, Para. 1, Law on Obligations

17 Art. 158, Law on Obligations

18 For more details see comments to Art 158, in [11, p. 368ff.]

19 Art. 265, Para. 1, Law on Obligations

20 Art. 172, Law on Obligations

21 Art. 265, Para. 2, Law on Obligations

22 Although this paper, for reasons of clarity, uses only the term "director", it should be born in mind that reference to a director in this regard also means reference to other persons owing special duties to the company under Art. 61, Para. 1, Items 4 and 5, Company Law – members of supervisory board, representatives, procurators and liquidators.

23 Art. 63, Company Law

In the first place, the provisions defining the duty of care indicate that the Law has adopted the *care of a prudent businessman* as the general standard for assessing the care of a director [19, p. 131]. Also, the Law has further defined this type of care by specifying that this is the care that would be exercised by "a reasonably careful person if they had the knowledge, skills and experience that might reasonably be expected of a person performing particular functions in a company".[24] Inferring from certain aspects of the doctrine, the criterion for assessing this type of care is the manner in which an independent manager of a company would act, aware of his duties, who is not running his own business, but other people's assets and who has been entrusted with care for other people's property interests [1, p. 497]. The least required standard of conduct is that of a normally prudent businessman, and the director who fails to observe this minimum in his work cannot be exculpated [1, p. 497]. The assessment of this type of care is made *in abstracto*, which means that the characteristics and attributes of a particular director are not taken into account, and the applicable standard is that of *objective care, i.e.* what is usually expected of such person in the relevant area of business transactions.[25]

In addition to the care of prudent businessman as the standard for evaluating the care of director, the Law, by way of an exception, also provides for the *care of a prudent expert*. In cases when director has certain specific knowledge, skills or experience, such knowledge, skills and experience are also taken into account in evaluating the level of care.[26] This means that a director who has specific knowledge, skills or experience, is *obligated* to apply them. In this way, the Law has provided for a stricter, greater liability of a director who is at the same time an expert in the relevant field.

On the other hand, when director is not an expert in the field relevant to company operations, *i.e.* when he does not have the required knowledge and experience in the field relevant for taking a particular decision, he may hire appropriate experts, such as auditors, investment advisors, legal consultants, accountants, etc. Under such circumstances, the director is required to "reasonably believe that such persons have acted in good faith in a given case".[27] It is necessary to implement appropriate care in the selection of an expert, because otherwise, the issue of director's liability for the wrong choice could be raised (*culpa in eligendo*). Furthermore, in order to determine that in reaching his decision, a director acted "in good faith, with the care of a prudent businessman and in a reasonable belief that he is acting in the best interest of the company", the following questions need to be answered: 1) what information was required in the given case for reaching the decision; 2) to what extent such information needed to be acquired (elementary information about a certain issue, expert opinion, research, relevant analysis, etc); 3) at what time it needed to be acquired (*e.g.* can director base his decision on an opinion submitted by a consultant one year before the decision is taken[28]). It seems that these and similar questions need to be addressed in the light of relevant circumstances of each particular case, whilst the court would be guided by the general principles of the Law on Obligations, as well as the rules of the Company Law bearing relevance to the issue of director's liability.

A director who has breached the duty of due care is liable for damages. It is a subjective liability, based on the assumption of fault under the above discussed general rules of the Law on Obligations. In terms of classification of obligations into the obligations pertaining to results and

24 Art. 63, Para. 1 and 2, Company Law

25 The general rule about the implementation of standards of objective care, in the context of rules pertaining to the duties of a company director, may seem somewhat relativised, given that in some cases, the assessment of care requires taking his personal attributes and qualifications into account. This derives from the very provisions of the Law concerning the duty of care, which draw a distinction between a case where the director is an expert (Art 63 Para 3) and the case where he does not have the required knowledge of the relevant field of business, (Art 63, Para 4). Furthermore, personal attributes must be taken into account within the context of general rules of the Law on Obligations concerning the grading of fault from intent, gross negligence to ordinary negligence, given that the tortfeasor's individual attributes and circumstances are, as a rule, determined in each particular case when the existence of intent and gross negligence is evaluated [18, p.10].

26 Art. 63, Para 3, Company Law

27 Art. 63, Para 4, Company Law

28 See Decision of the Higher Court of the Republic of Slovenia: VSL Judgement I Cpg 510/2010 dated 16 Sep 2010, whereby director is bound to pay damages to the company (bank) in the amount of EUR 2,519,224.00 because he had granted a loan to an insolvent company. The court took the position that "by invoking the opinion of M.P. /the expert/... the accused may not be released of its liability also because such opinion was compiled more than two years prior to conclusion of the first draft loan agreement..."

those pertaining to means, director's duty of care may be qualified as the obligation pertaining to means [16, p. 131]. In other words, the director, in the very nature of things, cannot *guarantee* achievement of success in the work he is undertaking; he is required, whilst acting on behalf of the company, to use his *best efforts* to achieve particular result, which in this case means that he has to act with the care of a prudent businessman, in good faith and in a reasonable belief that he is acting with the company's best interest in mind. Under the Company Law, the burden of proof rests with the director, and not with the company which has suffered damage. The director who proves that he has acted in compliance with Article 63 of this Law is released from the liability for damage.[29]

Once requirements for the existence of liability for damage are met, the injured party becomes entitled to damages. In general terms, damages consist of certain payment or actions which seek to remove the consequences of the loss the injured party has suffered, made at the expense of the person who had caused the loss. The purpose of such compensation is to restore the injured party to that position in which he or she would have been had the harmful event not occurred.[30] This means that damages must be equivalent to the loss suffered [14, p. 269]. The damages available to a company for the loss caused through operations of the director are generally governed by the rules of the Law on Obligations concerning the indemnity for damage to property,[31] with the exception of those issues that are specifically provided in the Company Law.

With regard to the manner of indemnification of damage to property, the Law on Obligations provides for restitution to the previous condition and pecuniary compensation. Under the basic rules of the Law, the responsible person must restore the conditions existing prior to occurrence of damage. This allows for the principle of restoration in kind, which entails individual restitution (*e.g.* return of items unlawfully seized from the inured party), repair of the damaged item, as well as generic restitution performed by giving items of the same kind, quality and quantity as the items to be compensated. The choice of the method of indemnification will depend on the circumstances of each particular case, claims by the injured party and assessment of the court. However, compensation in kind is neither the only nor the primary method of indemnification; compensation will always be in cash when the injured party so demands, except where the circumstances of the particular case should justify restoration to the previous condition. Finally, a combination of the compensation in kind and pecuniary compensation is also possible, in cases where restoration to the previous condition does not remove the damage in full [7, p. 330ff.]. When the injured party is a company, the damage often consists of the loss of a certain pecuniary amount, and recovery of such amount is, as a rule, requested by way of indemnification. Exceptionally, where the damage consists of seizing, destroying or damaging an item, the company may claim individual or generic restitution, depending on the circumstances of the particular case.[32]

As regards the scope of damages, the Law on Obligations provides that the injured party is entitled both to indemnity for actual damage and compensation for lost profit. The Law thus adopts the principle of full (integral) recovery, whereby recovery should equal the total damage caused. This principle is explicitly provided in the clause of the Law stipulating that the court, whilst also taking into account the circumstances after the occurrence of damage, shall determine damages in the amount necessary to restore the material state of the injured party into the condition it would have been had not the damaging act or omission occurred. The Law does not draw a distinction between the actual damage and lost profit depending on whether the tortfeasor caused the damage intentionally or through negligence.[33] By adopting the principle of integral recovery, the Law lays down the rule that the

29 Art. 63, Para. 5, Company Law

30 This is non-contractual liability for damage. To the contrary, the purpose of damages available for breach of contract is to place the claimant in the same position as if the contract had been fully performed. For more details about the differences between contractual and tortious liability, see [7, p. 330ff.]

31 Indemnity for damage to property is governed under Articles 185-198 of the Law on Obligations

32 For more details on indemnification of a company see [20, p. 121ff.]

33 In this regard, the position suggesting that so long as damage did not occur as a consequence of director's personal gain, the company is in principle entitled only to compensation of actual damage, however not lost profit, is contrary to the general principles of the Law on Obligations. This position is held by a number of international theoreticians, and is present in one decision rendered by domestic courts. For more details see [20, p. 55ff.]

injured party should be awarded full, complete recovery, regardless of the level of fault. In that regard, the level of fault involved in the tortfeasor's causing damage is quite irrelevant to the injured party; what matters to him is that the indemnification should fully cover the loss suffered as a result of the damage, *i.e.* that indemnification should equal the value of the damage caused [9].

However, the level of fault is not entirely irrelevant in this matter. Thus, the Law provides that the court may, whilst taking into account the material situation of the injured party, order the responsible person to pay an indemnity which is lower than the amount of the damage, provided that such damage was caused neither wilfully nor through gross negligence, where the responsible person is in straightened circumstances, so that the payment of full indemnity would reduce him to poverty. Furthermore, if the tortfeasor has caused damage whilst acting in the interest of the injured party, the court may order a lower indemnity, taking into account the degree of care the tortfeasor applies in his own affairs. Finally, in certain cases, the amount of indemnity may be affected by the injured party's conduct. In such cases, the liability is divided between the injured party and the tortfeasor. Under the Law, the injured party who has contributed to the occurrence of loss, or to loss being heavier than otherwise, is entitled only to a proportionally reduced indemnity. Where it is impossible to establish which part of loss arises from actions of the injured party, the court awards the indemnity taking into account the circumstances of the case.[34]

Compensation for damage becomes due from the moment the damage takes place, and the amount of compensation is determined according to the prices applicable at the time of the court decision. This rule applies both to indemnity for actual damage and compensation for lost profit. In assessing the lost profit, account is taken of the profit that was reasonably to be expected, based on the normal course of things or particular circumstances, but failed to be generated through the tortfeasor's acts or omissions. In determining the amount of damages based on the prices applicable at the time of the court decision, it is irrelevant whether such prices are higher or lower than those applicable at the time of the damage, and the reference to prices implies the current, everyday prices.[35] The arguments in favour of setting the time of court decision as one relevant for determining the amount of damages, underline that it offers the greatest guarantees for full compensation of damage, in view of frequent monetary changes resulting in reductions or increases of prices in the market [10, p. 52].

Finally, it is necessary to bear in mind that the Company Law provides for special deadlines for filing claims for damages on part of a company against the director who has breached the duty of care. In that regard, the provisions of the Company Law differ significantly from the general rules of the Law on Obligations on the statute of limitations for claiming damages.[36] Under the Company Law, such claim may be filed within six months of becoming aware of the breach, however not later than five years upon the actual occurrence of such breach.[37]

Duty to disclose personal interest

Legal actions and transactions where the company and its director appear concurrently as parties constitute business situations which require a set of legal rules of conduct for directors, to ensure that directors act in the interest of the company, rather than in their own personal interest.

The Company Law provides a broad definition of (direct and indirect) personal interest of the director, *i.e.* defines situations which involve the legal assumption of existence of director's personal interest.[38] The Law recognises *direct* personal interest of the director in cases of: 1. transactions between the company and the director; 2. transactions between the company and a person affiliated with the director[39]; 3. actions taken by the company in relation to the

34 For more details on these rules from the standpoint of a company as the injured party see [20, pp. 122-124]

35 See comments to Art. 189 in [11, p. 438]

36 Art. 376, Law on Obligations

37 Art. 77, Company Law

38 Art. 65, Para. 3, Company Law

39 Persons affiliated with the director include: blood relatives in direct line and in lateral line up to the third degree of kinship; spouse or *de facto* partner of such persons; director's spouse or *de facto* partner and their blood relatives up to the first degree of kinship; adoptive parents or children of the director, as well as descendants of adoptive children; all persons sharing the household with the director; legal entity in which the director holds material interest or is a controlling member; legal entity in which the director is a member of a management or supervisory body, Art 62.1.2 of the Company Law.

director or a person affiliated with the director (*e.g.* filing or withdrawing a lawsuit against the director, waiver of a right enjoyed by the company, etc). The director's *indirect* personal interest is deemed to exist in cases when the company enters into a transaction or takes action (a) in relation to a third party who has a financial relationship with the director (or a person affiliated with the director) and such relationship can reasonably be expected to affect the director's actions, or (b) which would bring financial gain to a third party, if such third party has a financial relationship with the director (or a person affiliated with the director), which can reasonably be expected to affect the director's actions.

In case of existence of (direct or indirect) personal interest, the director has the duty to notify such interest to the competent body of the company[40]. In compiling this notification, the director has to include a detailed description of the transaction (or action) undertaken and state the nature and extent of personal interest.[41] It is based on this notification that an approval of the transaction or action is granted. In limited liability companies, such decision is taken by the General Meeting by a simple majority of all shareholders, or by the Supervisory Board (in two-tier management systems). In joint-stock companies, if the director has a personal interest, the authorisation is granted by a majority of votes of all disinterested (non-executive) directors[42] or by the Supervisory Board (in two-tier management systems). When the authorisation is not granted by the General Meeting, it needs to be notified thereof and provided with a detailed description of the transaction (or action) and the nature of personal interest, at the first succeeding session.[43]

If transaction/action involving director's personal interest is not authorised, or if the authorisation was granted based on false or incomplete information, the company may file a lawsuit for annulment of such transaction[44] and indemnification against the director. Such action may be brought within six months of becoming aware of the breach, however not later than five years upon the actual occurrence of such breach. One or more shareholders may bring derivative action on behalf of the company, if at the time of filing such action they held shares representing minimum 5% of the company's share capital.[45] On the other hand, if the director can demonstrate that the transaction/action was in the interest of the company, or that no personal interest existed, no breach of rules regarding authorisation of transactions involving personal interest shall be deemed to have occurred[46]. If a third party (who was party to a transaction indirectly involving director's personal interest) was not aware and did not have to be aware of the existence of personal interest at the time of entering into the transaction, such transactions or actions are not annulled, which serves to protect the third parties acting in good faith.[47]

A director who breaches the above rules with the *intent* of causing damage to the company lays himself open to criminal liability.[48]

There are no special provisions in Serbian law governing this matter in respect of public companies,[49] although the Corporate Governance Code [5] explicitly provides for the principle of loyalty in this context, which lays down that members of the Board of Directors appointed by the state

40 Competent bodies are: (i) the Board of Directors or the General Meeting (in case of a company with a sole director) if a company has a one-tier management system, or (ii) the Supervisory Board, in two-tier management systems, Art. 65.1, 65.2 of the Company Law.

41 Art. 66.5, Company Law

42 Recommendation of the European Commission from 2005 about the role of non-executive directors and members of the Supervisory Board indicates that this authorisation ought to be given by independent directors, see [18]

43 Art. 66.4, Company Law

44 In this context see Decision of the High Commercial Court, Pz 2664/2007 dated 2 Apr 2008 – Court Practice of Commercial Courts – Bulletin No. 2/2008

45 Art. 77 and 79, Company Law

46 Art. 68, Company Law

47 Art. 67.3, Company Law

48 The penalties provided by the law include a fine or a prison sentence of up to 1 year, and if the damage incurred by the company exceeds RSD 10 million (ca. EUR 87,000), the breach is punishable by a term of imprisonment of between 6 months and 5 years, and a fine. The court may also impose an injunction barring the offender from holding an office or pursuing a vocation in accordance with the Criminal Code (Art. 582, Company Law).

49 Germany has rich court practice with regard to public companies. Thus, for example, a director of a public utilities company in Germany was held liable for damages and was fired because he had paid training for his employees at a catering company, in case where (i) it was not clear that the training was expedient for the public utility company and (ii) director's *de facto* spouse enjoyed the free use of the pool given to her by that catering company at that time. (Oberlandesgericht Koblenz Urt. v. 11.07.2013, Az.: 6 U 1359/12)

owe their loyalty to all shareholders and the *company*[50], rather than to the state as the shareholder. Thus, several important issues remain open in Serbian law when it comes to public companies such as which body should grant authorisation in case of personal interest of the director of public company (in the light of the aforementioned Corporate Governance Code, it seems that this should be the Supervisory Board, subject to mandatory consent of the independent member of the Supervisory Board[51], but the regulation is not clear).[52] These and other issues of corporate governance in public companies need to be provided in the law in more details, as confirmed by the European Commission's Serbia Progress Report which calls for "improving corporate governance of public companies".[53]

Duty to avoid conflict of interest

The duty of loyalty to the company, in terms of conflict of interest between the director and the company, implies a duty on part of the director to avoid any cases that may involve a conflict between his own interests and those of the company [16, p. 133]. Under the broadly accepted principles of comparative legislation and business practice, direct breaches of the duty to avoid conflict of interest include [16, pp. 135-136]: 1) personal use of corporate opportunities; 2) appropriation of company assets in broad sense of the word; 3) obtaining benefits from third persons from company related transactions; 4) breach of prohibition of unjust enrichment; 5) use of privileged information; 6) abuse of position in the company.

With this in mind, the Company Law provides explicit rules concerning the duty to avoid conflict of interest, envisaging that the director may not in his own interest or in the interest of persons affiliated to him[54]: (i) use company's assets; (ii) use any information he may have obtained in the capacity of the director, insofar as such information is not otherwise publicly available; (iii) abuse his position within the company; (iv) personally use opportunities for entering into transactions that arise for the company.[55]

In case of a breach of this duty, the director is liable for damages, and the company may claim transfer of benefits gained by the director.[56] Furthermore, it is irrelevant whether or not the company actually had the opportunity to use the assets or information or to enter into the transactions used by the director to his personal benefit. The claim for indemnification and transfer of benefits may be filed within six months of becoming aware of the breach, however not later than five years upon the actual occurrence of such breach.[57] One or more shareholders may bring derivative action on behalf of the company, if at the time of filing such action they held shares representing minimum 5% of the company's share capital. However, the director may be released of his liability if he can obtain prior or subsequent approval[58] from the competent body[59].

A director who breaches the duty to avoid conflict of interest with the intent of obtaining financial gain for himself or another person is subject to criminal liability.[60]

The Serbian law offers no special provisions governing this matter in respect of public companies, thus it remains an open issue how the above rules concerning the approvals related to the conflict of interest issues may apply to the directors of public companies.

50 Principle 4, Recommendation 2 of *Kodeks korporativnog upravljanja* [5]

51 Law on Public Companies provides that there has to be an independent member on the Supervisory Board of a public company (Art. 13)

52 A number of other legal systems have special codices related to corporate governance in public companies (Austria, Switzerland, Germany)

53 European Commission Serbia Progress Report, October 2014, p. 4

54 See definition of *affiliated persons* in [7, p. 221ff.]

55 Art. 69, Company Law

56 For more details on this solution in Serbian law see reference [18] and [16, pp. 133-136]

57 Art. 77, Company Law

58 Art 70, Company Law

59 This is the same competent body which grants the approvals related to personal interest, see footnote 39 and footnote 40

60 The penalties provided by the law include a fine or a prison sentence of up to 1 year, and if the damage incurred by the company exceeds 10 million RSD (ca. EUR 87,000), the breach is punishable by a term of imprisonment of between 6 months and 5 years, and a fine. The court may also impose an injunction barring the offender from holding an office or pursuing a vocation in accordance with the Criminal Code (Art. 583, Company Law)

Duty of confidentiality

In business practice, the duty of confidentiality is usually provided under a_contract, in confidentiality clause, whereby one or both parties to the contract undertake to keep confidential the information and data they have acquired through conclusion and execution of the contract, as well as in connection with the contract. Confidentiality clause has become not only common, but also a standard clause in contracts in business transactions. However, several issues are raised in the context of this clause, the most significant of which relate to: 1) defining the scope of the duty of confidentiality, 2) defining the duration of the duty of confidentiality, and 3) defining the sanctions in case of breach of the duty of confidentiality.

As regards the scope of the duty of confidentiality, the parties usually opt for a system defining in general terms the information deemed as confidential (*e.g.* "all commercial and technical information in relation to this Contract or in relation to the clients, business or affairs of the other Party"), whilst identifying the information which is *not subject* to confidentiality ("this restriction shall not apply to any information that is publicly available or required to be disclosed according to any law or regulation or binding regulation or judgement, order or requirement of any court or other competent authority") [4].

The period of observing the duty of confidentiality is usually determined in the contract, in accordance with specific needs and interests of the parties. It may be limited in time ("until five years after X shall have completed the work provided for in article 9 of this Contract", "until four years after the start of commercial use of the Project", etc) or provisions can be made for the duty of confidentiality to apply indefinitely ("I shall not disclose any Confidential Information, both during my employment with the Company and at any time thereafter", "X shall, at all times during and after expiry or termination of this Agreement, keep secret and confidential...").[61]

In view of the general rules of the law on obligations concerning indemnification, the parties rarely make specific contractual provisions for sanctions in case of breach of the duty of confidentiality. Thus, some confidentiality clauses do not provide for any sanctions, some contain only a general definition of the existence of liability in case of breach of the confidentiality duty ("it is understood that you shall be responsible for any breach of these obligations by any of your officers, directors, employees or professional advisors"), while some clauses contain a precise definition of the duty of indemnification ("In the event of any breach of the secrecy provisions of this Contract, the party in breach shall indemnify the other party for any loss or damages..."). In this context, it is necessary to bear in mind that it is extremely difficult in practice to identify and prove the amount of damage suffered due to a breach of the confidentiality duty, which is why a lump sum to be paid out in damages may be anticipated under these clauses ("In the event that a party should commit a breach of his undertaking under this Article, he shall be liable to pay to the other party for each breach a penalty of ____USD ").[62]

As regards the *legislation* governing the duty of confidentiality in Serbia, the Law of Obligations does not contain specific rules on this duty, but it derives from the very principle of good faith and fairness, as one of the basic principles on which this Law is based. On the other hand, the Companies Law expressly provides for the duty of confidentiality within the rules governing special duties owed to the company.

Under the Companies Act, the duty of confidentiality applies to director, other persons with special duties, as well as company's employees. The law stipulates that these persons should owe the duty of confidentiality until two years upon expiry of their terms, whilst allowing for a longer term if so provided under the Memorandum of Association, Articles of Association, the decision of the company, or employment contract. However, the Law does not allow such term to exceed 5 years[63], which means that any contractual clause providing for a longer or unlimited duration of this duty would be subject to the sanction of nullity.

The Law defines the trade secret as "any information whose disclosure to a third party could cause damage to the company, as well as any information which may

61 For more details see [3, p. 304ff.]

62 Examples of clauses in [3, pp. 308-311ff.]

63 Art. 72, Company Law

have economic value because it is not generally known and is not readily available to third parties who could gain economic benefit from its use or disclosure, and which is protected by the company with appropriate safeguards aimed at protecting the confidentiality. Information which is considered a trade secret can be production-related, technical, technological, financial or commercial information, a study, a research result, as well as a document, drawing, formula, object, method, procedure, notice or instruction of internal nature, etc. A trade secret is also any information defined as such under the law, other regulation or a company by-law. A company by-law may identify as trade secret only such information that complies with the requirements of the trade secret as provided in the Law. Furthermore, a company by-law may not define all information relating to the company's operations as trade secret.[64]

On the other hand, it is worth noting that disclosure of privileged information shall not be deemed as a breach of duty of confidentiality if such disclosure is: obligatory under the law; necessary to perform business operations or to protect the company interests; made to the competent authorities or general public with the sole purpose of calling attention to an offence punishable under the law.[65]

The sanctions provided by the Law for a breach of the duty of confidentiality are: indemnification, expulsion from company, in case of a company member, termination of employment relation, in case of a company employee.[66] This action may be filed within six months of becoming aware of the breach of duty, however not later than five years upon the actual occurrence of such breach.[67] One or more shareholders may bring derivative action on behalf of the company, if at the time of filing such action they held shares representing minimum 5% of the company's share capital.[68]

64 Art. 72, Company Law

65 Art. 73, Company Law

66 Art. 74, Company Law

67 Art. 77, Company Law

68 Art. 79, Company Law

Non-compete duty

Director's duty of loyalty to the company encompasses the area of director's unlawful competition with the company in which he holds the office of director [17, p. 148].

The rules governing unlawful competition are provided in the Company Law[69], but they may be extended under (a) the company by-law, *i.e.* Memorandum of Association or Articles of Association or (b) agreement between director and the company *i.e.* employment contract or director contract under the non-compete clause. The Company Law provides for the scope of prohibitions concerning director's engagement. Thus, without the approval of the competent body[70], the director may not: (i) act as a director, supervisory board member, representative, procurator, partner, general partner, controlling[71] shareholder or shareholder with a material interest[72] in another company with the same or similar scope of business activities (hereinafter: "Competitor"); (ii) be a sole proprietor with the same or similar scope of business activities; (iii) be employed with or otherwise hired by a Competitor; (iv) be a member or a founder of a Competitor.

Prohibition of competition should seeks to preserve company's legitimate interests in terms of protection from director's unlawful conduct (positive interest), but should also seek to preserve director's economic freedom (negative interest) [16, p. 150]. Thus, the Memorandum of Association or Articles of Association may provide for an extension of non-compete duty even beyond the term in office as the director, however not longer than 2 years. Furthermore, the said company by-laws may also identify transactions, and the manner and place of their performance, which are not deemed to be a breach of the non-compete duty.[73]

69 Art. 75, Company Law

70 See footnote 38.

71 Control implies a right or a possibility a certain individual has, independently or with other persons acting with him, to exert controlling influence on the company's business operations by means of participation in the original share capital, contract or a right to name the majority of directors or members of the supervisory board.

72 Material interest in a company exists if a single person holds more than 25% of the voting rights in the company, independently or with other persons acting in concert with him

73 Art. 75.2.2-3, Company Law

If director is in employment relation with the company, the company is obliged to pay to the director certain pecuniary compensation for such extended period of non-compete duty[74]. This rule on payment of compensation to the director should be interpreted so as to apply also to director contracts not involving employment relation, in cases where a company by-law or director contract provide for an extension of non-compete duty for the director beyond expiry of the director's term in office. If a director breaches the non-compete duty, he shall be liable for damages, whilst the company may claim transfer of benefits gained by the director or the Competitor. The director may also be barred from pursuing a vocation and his employment relation (if any) may be terminated.[75]

This action may be filed within six months of becoming aware of the breach, however not later than five years upon the actual occurrence of such breach.[76] One or more shareholders may bring derivative action on behalf of the company, if at the time of filing such action they held shares representing minimum 5% of the company's share capital.[77]

Serbian laws do not provide special regulations for this area in so far as public companies are concerned, thus, what has already been said in respect of the rules concerning public companies, applies, *mutatis mutandis*, to this area as well.

Conclusion

An examination of the rules provided in the Serbian law with regard to director's liability for damage caused to the company leads to the conclusion that the rules of the Companies Law governing this area cannot be viewed in isolation; their proper understanding and successful implementation require sound knowledge of all other relevant laws in this field, particularly the rules of the Law on Obligations and general principles of the obligations law. The general rules of the Law on Obligations are particularly relevant to the issue of assessment of director's duty of care, duty of confidentiality, as well as the issues raised in the context of indemnification in case of breach of special duties owed to the company.

With regard to public companies, the Serbian law does not provide specific rules on the liability of directors, but only general reference to appropriate application of the Companies Law. Given the differences in company bodies envisaged respectively by the Companies Law and the Law on Public Companies, this begs the question, left to the practice to address, of the body and the procedure that should grant approval to the director for certain legal transactions involving personal interest or conflict of interest between director and the public company, or in cases of prohibition of competition.

In view of the fact that Serbia has not yet developed significant court practice regarding the application of the rules on directors' liability for damage caused to the company, it is essential that legal solutions in this area should be carefully analysed from the aspect of legal doctrine, both in terms of domestic law and requirements of business practice and in terms of their comparison with the corresponding solutions of the comparative law. Given that the duties of care and loyalty should be seen as foremost strategies towards addressing the so-called first agency problem, i.e. the conflict between the shareholders and managers, a consistent interpretation of the rules related to these issues and a harmonised court practice whereby these rules are brought to life are key factors in achieving a higher degree of legal security in this area.

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ROLE OF BIG DATA IN OPEN INNOVATION PRACTICES: THE CASE OF SERBIAN ICT INDUSTRY

Uloga velikih podataka u praksi otvorenih inovacija - primer srpske IKT industrije

Abstract

Big data is the term for data sets that are characterized by great volume, variety, velocity, veracity, and which are very hard or impossible to capture, manage, store, and analyze with traditional data management tools. By engaging in open innovation practices companies interact with producers, suppliers, customers, competitors, academics, consultants, other companies, which enables them to collect large amounts of data from a variety of sources with greater frequency. Open innovation concept requires techniques and technologies with the ability to integrate, process and analyze both external and internal data sources and translate them into value. The aim of this paper is to show the role and importance of big data concept for companies which are pursuing open innovation practices with a special focus on Serbian information and communication industry (ICT).

The results indicate that big data is becoming a reality within the Serbian ICT companies as 91% of surveyed companies responded that they have big data initiative planned or in progress. The primary data issues that drive investment in big data include the possibilities of analyzing data from diverse sources and analyzing new data types, which indicates that big data in surveyed companies is not about volume, but variety and velocity. Engaging in open innovation practices allows companies to gather real-time data, unstructured data, higher quality data, and more granular data and transform them into fact-based decisions in order to achieve higher quality products and services and more efficient operations.

Big data concept is still in early development phase in surveyed ICT companies, with clear signs of increased awareness of its importance for competitive advantage.

Key words: *information and communication technology, big data, analytics, open innovation, partnership, organizational change*

Sažetak

Big data (veliki podaci) predstavlja termin kojim se opisuju podaci čiji obim, raznovrsnost, struktura i brzina generisanja prevazilaze mogućnosti tradicionalnih baza podataka i softvera za njihovo prikupljanje, obradu, upravljanje i analiziranje. Primenom praksi otvorenih inovacija kompanije stupaju u partnerske odnose sa proizvođačima, dobavljačima, konkurentima, akademskom zajednicom, konsultantima, drugim kompanijama i prikupljaju velike količine podataka iz različitih izvora sa znatno većom frenkventnošću. Koncept otvorenih inovacija zahteva primenu tehnika i tehnologija koje poseduju mogućnosti integrisanja, obrade i analiziranja eksternih i internih izvora podataka i njihovog transformisanja u vrednost. Cilj rada je da ukaže na značaj i ulogu *big data* koncepta prilikom stupanja u prakse otvorenih inovacija, na primeru kompanija iz informaciono-komunikacione industrije u Srbiji.

Rezultati pokazuju da je *big data* realnost u srpskim IKT kompanijama i da u 91% anketiranih kompanija postoje *big data* inicijative koje su u toku ili su planirane. Ključni razlozi za primenu *big data* tehnologija su mogućnosti da se analiziraju potpuno novi tipovi i izvori podataka, što ukazuje da *big data* nije primarno uzrokovan veličinom podataka, već njihovom raznovrsnošću i strukturom. Stupanjem u prakse otvorenih inovacija kompanije prikupljaju nestrukturirane, relevantnije i detaljnije podatke u realnom vremenu i transformišu ih u odluke kojima će poboljšati kvalitet proizvoda i usluga i povećati efikasnost poslovnih procesa.

Big data koncept je još uvek u ranim fazama razvoja u anketiranim IKT kompanijama, ali postoje jasni indikatori da među ovim kompanijama postoji svest o značaju *big data* za sticanje konkurentske prednosti.

Ključne reči: *informaciono-komunikaciona tehnologija, veliki podaci, analitika, otvorene inovacije, partnerstva, organizaciona promena*

Introduction

The evolution of information technology has led to big data and ability to monetize innovative ideas. Also, today there cannot be found a company that is big enough, strong enough and smart enough to stay competitive focusing only on its own knowledge and resources. The mixture of big data techniques, technologies and philosophy with open innovation practices will transform the way enterprises run their businesses. Companies are establishing various forms of partnership in order to stay alive and achieve agile business processes that allow them to adapt quickly to evolving markets, customer needs, policies and regulations. Big data, as a means of leveraging unique insights about customers, products, and operations gives companies the opportunity to optimize key business processes and uncover new opportunities for competitive advantage. Big data is placed at the center of disruptive technologies that could have economically disruptive impact until 2025 [29].

The aim of this paper is to show the role and importance of big data for companies which are pursuing open innovation practices. Additionally, in this paper we will deal with the analysis of the Serbian information and communication industry (ICT) and try to answer the following questions: Which open innovation practices are the most frequently used in Serbian ICT companies? Do they have need for big data, and which data are important to them? What are the primary benefits from big data? Which factors are critical to successful business adoption of big data? In order to answer the imposed research questions, we used theoretical and empirical approaches. The theoretical approach is based on critical evaluation of existing literature by analysis, synthesis, deduction and induction while the empirical approach is based on the results collected from survey.

The paper is organized as follows. *The first part* of the paper highlights the importance of innovation economics doctrine and treatment of knowledge as endogenous variable. Companies have become aware that they can no longer stay competitive on their own, which caused a shift from closed innovation toward open innovation concept. *The second part* of the paper deals with big data as disruptive technology and analytics that has swept into every industry showing its importance in analyzing and making value of the data collected through open innovation practices. *The third part* of the paper is based on the research of big data and open innovation practices in companies in Serbian ICT industry and discussion of research findings.

Innovation economics doctrine

Eight decades ago, economist *Joseph Schumpeter* (1934) argued that innovation is the main driver of economic development. As evidence from the past identifies innovation as the main driver for companies to prosper, grow and sustain high profits [15], nowadays, there is awareness that a company's long-term competitiveness lies in its ability to innovate. Innovation refers to implementation of new or significantly improved products (physical good or service), processes, new marketing methods, or new organizational methods in business practices, workplace organization, or external relations [31].

Economic doctrine that does not treat knowledge and technology as something that happens outside economic activity is known as "innovation economics" or by a variety of other terms, including "endogenous growth theory", "evolutionary economics", and "neo-Schumpeterian economics" [2]. Instead of treating knowledge and technology as an exogenous factor in the economic model, innovation economics provides an economic framework with clear understanding of how innovation occurs and which intentional activities by economic actors and government are stimulating for innovation.

Innovation economics has at least six key principles [2]:

1. Innovation drives economic growth. In knowledge-based economy innovation is the key factor that drives economic growth, not capital accumulation as claimed by neoclassicalists. This means that the main question is no longer why innovation is important, but instead, how to pursue innovation and how innovation processes can be managed.
2. The primary drivers of economic growth are productive efficiency (the ability of organizations to reorganize production in ways that lead to the largest amount of output with the fewest inputs)

and adaptive efficiency (the ability of economies and institutions to change over time to respond to successive new situations, in part by developing and adopting technological innovations).

3. Innovation and productivity growth take place in the context of institutions: evolving and learning institutions are the key to growth. Innovation is seen as a process that takes place through the interaction and learning of firms, industries, and other organizations. When research in industry is isolated from the rest of the firm there is a great danger for that research to become sterile and unproductive [36, p. 170]. Nowadays, many countries have formulated national innovation systems which represent the "set of distinct institutions which jointly and individually contribute to the development and diffusion of new technologies and which provides the framework within which governments form and implement policies to influence the innovation process. As such it is a system of interconnected institutions to create, store, and transfer the knowledge, skills and artifacts which define new technologies" [26, p. 462].
4. The new knowledge-based economy tends toward change rather than equilibrium. Innovation economists believe that market disequilibrium is responsible not for economic inefficiency but for growth and progress. The entrepreneur who is "endlessly innovative" is a person who constantly irritates the market and keeps it from settling down to a state of equilibrium.
5. Individuals and firms are not rational maximizers. Innovative activity typically involves uncertainty and, as a result, innovative efforts will meet with many failures as well as some great successes.
6. Smart public-private partnerships are the best way to implement policy. Smart public-private partnerships can play a key role in helping non-governmental organizations become more innovative and productive where there are significant market failures limiting their own action.

Since the industrial revolution of the late 18th and early 19th centuries, technology has had a unique role in powering growth and transforming economies [25, p. 1]. Today, more than ever, technology disrupts, replacing older ways of doing business and offsetting old skills, organizational approaches, and routines.

From closed toward open innovation concept

In today's global competition, companies have realized that they cannot innovate alone focusing on their own skills, resources and expertise. Establishment of cross-functional business teams, internal venture capital processes, creation of new business units for research and development (R&D) produced innovations, but their nature were periodic and incremental. Having in mind that continuous and radical innovations are necessary for survival and success in today's global economy, companies have realized that collaboration with other entities is of extraordinary importance for competitive advantage.

In 2003, *Henry Chesbrough*, organizational theorist, professor and executive director of the Center for Open Innovation, coined the term "open innovation" and defined it as "the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively" [7, p. 1]. The key message is that companies should open up their innovation processes and use external as well as internal ideas, creativity, knowledge, and paths to market. They need to use a broad range of sources for innovation activities, such as information and knowledge of producers, suppliers, customers, competitors, academics, consultants, and other companies. As *Koschatzky* stated "firms which do not cooperate and which do not exchange knowledge reduce their knowledge base on a long-term basis and lose the ability to enter into exchange relations with other firms and organizations" [22, p. 6]. Reviewing the literature, it can be found that some innovation modalities have been around a long time such as the specialty labs for customized testing, co-creation, user innovation, and that the other modalities are arising, for example, tech-scouting, crowdsourcing, and public-private partnerships [4, p. 16]. All of these innovation modalities described with variety of names are placed under open innovation umbrella.

Key characteristics that distinguish the open innovation concept among many other concepts in the academic literature are [7, pp. 8-11]:

1. Equal importance given to external knowledge, in comparison to internal knowledge. In open innovation concept external knowledge plays very useful and supplemental role to internal knowledge.
2. The centrality of the business model in converting R&D into commercial value. Companies actively search for genius inside and outside the firm, and inventive output is not restricted by the current business model.
3. As opposed to closed innovation concept where if an R&D project was cancelled nothing was done about it, in open innovation concept projects are evaluated through business model by all partners.
4. Enabling outbound flows of technologies allows firms to let technologies (that lack a clear path to market internally) seek a path to market externally.
5. Useful knowledge is generally believed to be widely distributed and of high quality, and even the most capable R&D organizations need to be well connected to these external sources of knowledge.
6. Proactive role of intellectual property management in open innovation concept enables companies to practice their internal technologies without being blocked or held by external intellectual property.
7. The rise of innovation intermediaries. As innovation becomes a more open process, many companies are specialized to provide information access, and even finance to enable open innovation practices to occur.
8. Development of new and different metrics for assessing the innovation capability and performance. Classical metrics such as the percentage of sales spent on internal R&D, the number of patents produced per dollar of R&D, etc. are abandoned, while the questions of how much R&D is being conducted within the company's supply chain, what percentage of innovation activities originated outside of the company become more important.

The main question for companies is not why it is important to innovate, but how to innovate. In general, there are two types of open innovation practices [9]:

Inbound (outside-in) practices. These practices can increase a company's innovativeness by enriching its own knowledge base through the integration of suppliers, customers, and external knowledge sourcing. The most frequently used inbound practices are: consumer co-creation, informal networking, publicly funded R&D consortia, contracting with external R&D service providers, supplier innovation awards, crowdsourcing, and specialized services from open innovation intermediaries.

Outbound (inside-out) practices. Companies that establish these practices focus on externalizing their knowledge and innovation in order to bring ideas to market faster than they could by relying exclusively on internal strengths. Inside-out practices refer to earning profit by bringing ideas to market, selling intellectual property, and transferring ideas to the outside environment. The most frequently used outbound practices are: joint venture activities with external partners, participation in public standardization, corporate business incubation and venturing, intellectual property out-licensing and patent selling, donations to commons or nonprofits.

Some authors have come up with the third practice of open innovation and named it *coupled process* [16, pp. 312-313]. Companies that establish the coupled process combine the outside-in with the inside-out processes to jointly develop and commercialize innovation through alliances, cooperation, and joint ventures.

Companies as innovation engine

According to *Joseph Schumpeter* (1942) "there was a time, not so long ago, when 'innovation' meant that companies needed to invest in expensive internal research laboratories, hire the most brilliant people they could find, and then wait patiently for novel products to emerge. Not anymore" [8, p. 12]. The question is no longer whether open innovation will replace the traditional, closed innovation concept, but rather how open innovation processes need to be managed in order to be successful [36]. Open innovation assumes that useful knowledge is widely distributed and that even the most capable R&D organizations must identify, connect to and leverage external knowledge sources as a core process in innovation [10]. But, it is important to acknowledge that open innovation concept goes beyond the externalization of research and development, it reflects a transformation of how firms use and manage their intellectual property [42], it requires significant organizational change and a redefinition of the tasks and boundaries inside the organization, to the point that "open innovation can be considered as an organizational innovation" [12]. Engaging in open innovation practices, companies are becoming the key facilitators of innovations, and collaboration with different entities has become a strategic imperative for them [37, p. 2].

In order to absorb new ideas from external sources and to find the way to integrate them with internal processes companies need dynamic capability [13] which refers to the company's ability to integrate, create, reconfigure internal and external competences in order to achieve innovation [41, p. 516]. Further, companies need to find the ways to increase their ability to grow into new business fields fast and foster innovation in fields in which they do not have any prior experience. Also, absorptive capacity as the ability of a company to recognize the value of new, external information, assimilate it and apply it to commercial needs [13, p. 28] is of crucial importance to its innovative capabilities.

Big data as innovation fuel

Companies which engage in open innovation practices interact with many other organizations and individuals, collect, integrate, manage, store and analyze data from of variety of sources with greater frequency. They are focused on data analysis and real time decision-making based on tremendous amount of data [6].

Pioneers in the research into the amount of data produced, stored and transmitted, *Hal Varian* and *Peter Lyman,* professors at the University of California, Berkeley, estimated as a part of their project "How much information", ran from 2000 to 2003, that 5 exabytes of new data were stored globally in 2002 and that 18 exabytes of new original data were transmitted. Information management company EMC sponsored the survey "Digital Universe" whose results showed that in 2007 the amount of digital data created in a year exceeded the world's data storage capacity for the first time. Some other studies also revealed that while global storage capacity grew at an annual rate of 23%, the ability to generate and process data measured with general-purpose computing capacity grew at a much higher annual rate of 58% [24, pp. 18-19]. IBM estimates that humanity creates 2.4 quintillion bytes of data every day – so much that 90% of the data in the world today has been created in the last two years alone [35, p. 19].

The progress of the ICT industry has led to the emergence of big data which refers to the datasets whose size is beyond the ability of typical database software tools to capture, store, manage and analyze data [24]. Big data is not just matter of size, it is best described by 4V [40, p. 4]: 1) *Volume* as the huge amount of data that organizations are trying to harness to improve decision-making across the enterprise, 2) *Variety* which refers to different types of data and data sources: data from social networks, digital TV, credit cards, medical devices, sensors, bar codes, surveillance cameras, etc., 3) *Velocity* as the speed at which data are created, processed and analyzed reflects the need for real-time nature of data creation and decision making, and 4) *Veracity* which refers to the level of reliability associated with certain types of data and reflects the need for high-quality data.

Analyzing large data sets gives a company the opportunity to gain insights into new types and sources of data to make businesses more agile. McKinsey Global Institute estimated that big data creates value for companies in several ways [24, p. 5]: 1) creating transparency – simply making big data more easily accessible to relevant stakeholders in a timely manner; 2) enabling experimentation to discover needs, expose variability, and improve performance; 3) segmenting populations to customize actions – companies can create highly specific segmentations and tailor products and services precisely to meet those needs; 4) replacing/supporting human decision-making with automated algorithms; 5) innovating new business models, products, and services.

Advances in ICT definitely "brought the firm to the world, but they also brought the world to the firm" [43, p. 665]. In order to extract value from big data, it must be processed and analyzed in a timely manner by analytics. By pure definition, analytics is the discovery and interpretation of meaningful patterns in data – but for business, analytics should be viewed as the extensive use of data, statistical and quantitative analysis, and predictive models to drive fact-based business management decisions and actions [17, p. 6]. Analytics enable organizations to meet stakeholder demands, create market advantages, manage risk, improve internal processes and enhance organizational performance by turning data into innovations [3]. Outperforming companies will be those that make data and analytics central to their innovation processes [32]. These companies, known as "analytical innovators" [20, p. 7], tend to view external data created in open innovation activities as a core asset, and they form analytics function in order to monetize innovative ideas.

As technological progress allows companies to collect increasingly vast quantities of data from external sources through open innovation practices, the analysis of these data sets has emerged as a powerful new tool, and data is becoming the currency of the knowledge economy [1].

In order to benefit from big data, from business perspective, companies must learn to [27, p. 13]:

- Use big data analytics to drive value and create competitive advantage for company.
- Capitalize on new technology capabilities and leverage the existing technology assets.
- Enable the appropriate organizational change to move towards fact-based decision, adoption of new technologies and create a single multidisciplinary analytics team.
- Deliver faster and superior results by embracing and capitalizing on ever-increasing rate of change that is occurring in the global market place.

Several research documents have highlighted the state of big data among companies, IT executives and professionals.

IBM surveyed 900 business and IT executives from 70 countries. Results show that leaders are 166% more likely to make most decisions based on data; are 2.2 times more likely to have a formal career path for analytics; 75% of leaders cited growth as the key source of value from analytics; 80% of leaders measure the impact of analytics investments [19].

Bain company, by surveying more than 400 large companies, found that the leaders in big data practices are [33]: twice as likely to be in the top quartile of financial performance within their industries; five times as likely to make decisions much faster than market peers; three times as likely to execute decisions as intended; twice as likely to use data very frequently when making decisions.

TEK systems surveyed more than 2000 IT professionals and more than 1500 IT leaders on the topic of big data. Results showed that: 90% of IT leaders and 84% of IT professionals believe investments of time, money and resources into big data initiatives are worthwhile; only 14% of IT leaders report big data concepts are regularly applied in their organizations; 60% of IT leaders say their organizations lack accountability for data quality [42].

Accenture surveyed C-level executives and other senior technology leaders from 19 countries. Results showed that 89% of those respondents rate big data as "very important" or "extremely important" to transforming operations into a digital business, and 82% of executives agree that big data provides a significant source of value for their companies. The study noted that companies are using big data moderately or extensively to identify new sources of revenue (95%), retain and acquire customers (90%), and develop new products and services (89%) [39].

The concept of the research

The goal and object of research. The object of research, the companies in ICT industry, was not selected randomly. The ICT industry is a promoter of society informatization, as it implements and maintains ICT infrastructure in other organizations and, according to literature, is at the forefront in the implementation of new technologies and business practices.

Many authors have highlighted the role of information and communication technologies in increasing the ability of firms to work across time, space and culture, facilitating knowledge flow, and thus helping to support the shift towards more open and collaborative innovation practices. On the one hand, these technologies shape the strategic orientation of industrial companies towards external environment, and on the other facilitate the realization of innovative activities [14, p. 333]. Also, the reasons for this object of research are the facts that open innovation practices are the most advanced in high-technology industries [11] and that these industries create a fertile ground for innovation [18].

The importance of research. The global crisis is reflected in Serbian economy through high unemployment, rising foreign debt, poor living standard. On the other hand, there are some bright points, such as export of software and ICT services: in 2007, the software export amounted to EUR 62 million; in 2011, it was up to EUR 166 million, while in 2012 it exceeded EUR 200 million [5] and in daily jargon it can be heard that Serbia is *the country of farmers and ICT specialists* (e.g. Radio Television of Vojvodina). ICT industry has been recognized by the state as a significant segment for further development of the Serbian economy and the government has adopted several policies and strategies. The best example of how organizations may use new technologies and competent employees positioned in a new way to achieve competitive advantage is the example of ICT companies [34].

The research questions. Which open innovation practices are the most frequently used in Serbian ICT companies? Do they have need for big data, and which data are important to them? What are the primary benefits of big data? Which factors are critical to successful business adoption of big data?

The research was conducted by using the questionnaire technique for data collection: the questionnaire was sent via e-mail to 318 ICT companies. The questions were inspired by New Vantage Big Data Executive Survey which has been following corporate adoption of big data approaches and solutions from 2012. New Vantage Partners provides expertise and guidance to Fortune 1000 business and technology executives who are seeking to leverage data and analytics to derive business value and transform critical business processes [30].

The questionnaire consists of 20 questions asking about:

- General information about companies: age, number of employees, key characteristics in conducting their businesses;
- The key practices of open innovation and satisfaction with individual partners in open innovation activities;
- The importance of data and analytics for value creation;
- Primary business benefits resulting from big data;
- Factors that are of crucial importance to successful business adoption of big data.

The questionnaire was active from 8th September until 20th October and was completed by 54 companies, making the response rate of 17%. Collected data from the questionnaire were analyzed and interpreted by the description method.

Discussion of research findings

Measured by the number of permanent employees, 83% of surveyed ICT companies belong to the group of small companies. One half of surveyed companies operate from 5 to 10 years, almost one third operate from 10 to 15 years, while 20% of companies represent very young companies which operate less than 5 years.

The survey highlights that a 91% of surveyed companies responded that they have big data initiative planned or in progress. This result indicates that big data is becoming a reality within Serbian ICT companies. Among the primary data issues driving companies to use big data are the possibilities of analyzing data from diverse sources (54%) and analyzing new data types (33%). Only 8% of surveyed companies analyze data sets larger than 1TB (terabyte), so big data in surveyed companies is not about volume, but variety and velocity. Big data techniques and technologies enable surveyed companies to address the key data challenges, including real-time data, unstructured data, higher quality data, and more granular data (see Table 1).

Table 1: Data challenges that companies are addressing with big data

Statements	Pct.
Using real-time data	61%
Understanding unstructured data	50%
Using higher quality data	44%
Using more granular data	44%
Using more current data	37%
Storing more historical data	20%
Integrating a wider variety of data	17%
Understanding streaming data	15%
Cleansing data	11%

Source: Author

Business functions that are the most important users of big data and analytics in surveyed ICT companies are customer service, customer and market analysis, internal processes and operations, and product development (see Table 2).

Table 2: Business functions that are the most important users of data and analytics

Business functions	Pct.
Customer Service	57%
Customer and Market Analysis	56%
Internal Processes and Operations	53%
Product Development/Management	30%
Direct and Digital Marketing	28%
eCommerce, eBusiness, Digital Operations	22%
Risk Management	15%
Human Resources	13%
Fraud Management	4%

Source: Author

As regards the tangible benefits they want to achieve through big data, surveyed ICT companies most frequently stated (see Table 3): higher quality products and services (65%), better, fact-based decision making (61%), more efficient operations (52%).

Table 3: Tangible benefits that companies hope to achieve through big data initiatives

Benefits	Pct.
Higher quality products and services	65%
Better, fact-based decision making	61%
More efficient operations	52%
Increased sales	37%
Reduced risk	13%
Improved customer experience	9%

Source: Author

It comes as a surprise to find out that big data initiatives are in 48% of surveyed companies mostly IT driven, with minimal business involvement, while 46% of companies stated that big data initiative is driven by IT and business collaboration. Choosing the right technologies (with 56% of responses) is perceived as the most important factor in ensuring business adoption of big data initiatives. At the top of the list of the most important factors are successful implementation of technology capabilities (46%), agreement on the importance of analytics (46%), and strong organizational alignment (39%).

It concerns us that a small number of companies indicated the importance of executive sponsorship (only 7%), clear definition of business questions and objectives, and recognition that data are shared corporate asset (20%). New technologies are very powerful and provide a real chance to improve decision-making, but technology is not enough. It is required that companies carefully plan, formulate clear goals, work hard, and embrace organizational change. Successful business adoption of big data requires new processes and roles in organization. There is no company that answered that data are not important, and more than a half of companies indicate that data are of tremendous importance for success. For that reason, they engage in open innovation practices.

The most frequently used open innovation practices in surveyed ICT companies are: 1) involvement of consumers and customers in generation, evaluation, and testing of new ideas for products, services, processes (59%); 2) networking with other organizations without a formal contractual relationship, e.g. at conferences, workshops, events, etc. (57%); 3) licensing of internal intellectual property to external organizations via licensing agreements or selling via single payment (35%); 4) outsourcing innovation problem sourcing via an open call to external organizations and individuals to submit ideas (17%). Partners whose ideas and information surveyed companies indicated as the most important are customers (87%), suppliers (30%), public research organizations (22%), entrepreneurs and start-ups (15%).

They stated that their access to relevant, accurate and timely data is more than adequate, so are their analytic capabilities. On the other hand, 81% of surveyed companies have not established analytics function and less than 5 employees in overall company are dedicated to analytics. Establishment of analytics function is very important, because it can identify innovative opportunities in key processes, functions, roles. Also, it creates a catalyst for innovation and change, and by challenging the status quo can help to create new possibilities for the businesses [17, p. 7].

Before the company can create value from big data, it must get data scientists and analytics expert. More than 80% of surveyed companies have the position "Data Scientist" and they mostly (65%) train existing analytics professionals or hire new people with new data science knowledge and skills (52%). These professionals must have mathematical, technology, statistical knowledge and skills, but also the knowledge about business processes and so-called X-factor which is intellectual curiosity [21]. For surveyed companies it is challenging to find these professionals (see Table 4). This result is not surprising bearing in mind that recent McKinsey Global Institute study forecasts a significant shortfall in big data skills even in the United States. "By 2018, the United States alone could face a shortage of 140,000 to 190,000 people with deep analytical skills as well as 1.5 million managers and analysts with the know-how to use the analysis of big data to make effective decisions" [24, p. 10].

Table 4: How challenging is to find employees with big data skills in general?

Statements	Pct.
It is easy	4%
Somewhat challenging	20%
Challenging	35%
Very difficult to find or hire	35%
Impossible to find or hire	0%

Source: Author

Throughout history, there has always been a significant gap between the rate of adoption of new technology by academia and industry [28]. Universities must align their programs with industry requirements and move quickly to ensure that their graduates have the required skills for the digital age. Educational systems are not preparing students to handle big data. Technology education programs are focused on hardware, software, and tools for dealing with big data, but they do not provide knowledge about business processes and operations. On the other hand, students with knowledge about business processes and operation do not have technological knowledge and skills. Certainly, data have swept into every industry, they become like other essential factors of productions, and data and analytics literacy must become a reality in all educational fields [23].

Conclusion

Innovation as the most important factor of economic growth requires collaboration and partnerships, so many companies are pursuing open innovation practices. With rapidly increasing volume, variety, velocity, and veracity of data companies are faced with challenge to manage all these data and to create value on their basis. Data gathered through open innovation practices are useless unless organizations are able to transform them into usable knowledge and value. In this paper, big data is viewed as a disruptive technology and the use of big data as a crucial way to stay competitive in the 21st century.

The research was conducted with the aim to identify the role of big data in open innovation practices in the case of Serbian ICT industry. The results indicate that big data is becoming a reality within Serbian ICT companies as 91% of surveyed companies responded that they have big data initiative planned or in progress. Among the primary data issues that drive big data are the possibilities of analyzing data from diverse sources as well as analyzing new data types. Only 8% of surveyed companies analyze data sets larger than 1TB (terabyte), so big data in surveyed companies is not about volume, but variety and velocity. Real-time data, unstructured data, higher quality data, more granular data present the key data challenges that surveyed companies are addressing with big data in order to achieve higher quality products and services, better, fact-based decision making, and more efficient operations. Serbian ICT companies are aware of the importance of cooperation and they are engaged in various open innovation practices: involvement of consumers and customers in generation, evaluation, and testing of new ideas for products, services, processes; networking with other organizations without a formal contractual relationship (at conferences, workshops, events); licensing of internal intellectual property to external organizations via licensing agreements or selling via single payment.

Open innovation practices require big data techniques, technologies and philosophy in order to integrate, process and analyze both external and internal data sources and translate them into value. Surveyed ICT companies stated that their access to relevant, accurate and timely data is more than adequate, so are their analytic capabilities. On the other hand, 81% of surveyed companies have not established analytics function and less than 5 employees in overall company are dedicated to analytics. These results are a matter of concern, especially if we look at how surveyed companies ranked the most important factors for big data business adoption. Choosing the right technologies is perceived as the most important factor in ensuring business adoption of big data initiatives, and the following factors are successful implementation of technology capabilities, agreement on the importance of analytics, and strong organizational alignment.

Results indicate that big data is still in early development phase in surveyed ICT companies, with clear signs of increased awareness of their importance for competitive advantage. We hope that this paper will contribute to deepening the understanding of what big data is, why it is important for open innovation practices, and which factors are critical to successful business adoption of big data.

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EFFECTS OF DEVELOPMENT AND INCREASING POWER OF RETAIL CHAINS ON THE POSITION OF CONSUMERS IN MARKETING CHANNELS

Efekti razvoja i jačanja snage maloprodajnih lanaca na poziciju potrošača u kanalima marketinga

Abstract

The end of the last century and the beginning of this one are marked by intensive processes of retail markets concentration worldwide. One might say that a kind of retail revolution is underway, primarily characterized by an intensive development of retail chains and by increase of their power in the marketing channels. Parallel to their overwhelming development, big retail chains assume key role in designing and managing marketing channels. In this manner, they immensely change position and interrelations among the members of channels, but also design one new reality for consumers' position on the market. The essential question is whether the development of big retail chains is in real favor of consumers or not. In that sense, the fear of development of big retail chains which rapidly change familiar picture of retail and old position of consumers is constantly present in the initial phase of the modern retail market development.

Key words: *retail, market concentration, marketing channels, retailer power, consumers*

Sažetak

Kraj prošlog i početak ovog veka obeležili su intenzivni procesi koncentracije maloprodajnih tržišta u svetu. Moglo bi se reći da je na sceni svojevrsna maloprodajna revolucija, čije je osnovno obeležje intenzivan razvoj maloprodajnih lanaca i jačanje njihove snage u kanalima marketinga. Uporedo sa svojim nezadrživim razvojem, veliki maloprodajni lanci preuzimaju ključnu ulogu u kreiranju i upravljanju kanalima marketinga. Time iz osnova menjaju poziciju i međusobne odnose članova u kanalima, ali stvaraju i jednu sasvim novu stvarnost za poziciju potrošača na tržištu. Najbitnije pitanje je da li je razvoj velikih maloprodajnih lanaca u stvarnom interesu potrošača ili ne. U tom smislu, u početnim fazama razvoja savremenog tržišta maloprodaje neprestano tinja strah od razvoja velikih maloprodajnih lanaca koji ubrzano menjaju, do tada, poznatu sliku maloprodaje i staru poziciju potrošača.

Ključne reči: *maloprodaja, koncentracija tržišta, kanali marketinga, snaga maloprodavaca, potrošači*

Introduction

In the developed countries, as well as in transition ones which are in the process of establishing and strengthening the market economy, retail becomes very complex, dynamic and highly influential sector. In that sense, the following changes in current processes of retail restructuring are specially stressed: "fast growth of large firms, a more strategic approach to managerial decision taking, more complex organizational structures, and more retailer coordinated value chains" [13, p. 3].

The mentioned changes manifest themselves to the highest extent in trade of fast moving consumer goods. Due to the high importance of this kind of products, simultaneously with the market concentration growth and development of big retail chains, the scientific and professional disputes on how the changes with respect to powers of members of marketing channels reflect on functioning of marketing channels and position of members within: producers, wholesalers, small and medium-sized retailers, are becoming more intensive. However, there is a special interest in effects of retail chains development and increase of their power on the position of consumers.

Owing to the growth of their market and negotiating power, large retailers start to dictate the conditions even to the globally biggest producers. They take a dominant role in marketing channels, and thus they take numerous marketing functions which were traditionally performed by wholesalers and producers. But, they also take a leading role in developing the relationship with consumers. The most successful among them "giant retailers with their enormous buying power, large market shares, and sophisticated managements have been referred to as power retailers and, category killers, terms that convey the dominant position these retailers enjoy" [15, p. 63].

Today, retailers, in accordance with the modern definition saying that retail is "set of business activities that adds value to the products and services sold to consumers for their personal or family use" [14, p. 6] want to offer new, more significant, values to consumers. "Retailers today must differentiate themselves by meeting the needs of their customers better than the competition" [5, p. 3]. In order to strengthen their interrelations and to increase loyalty of consumers, they try to meet consumers' various needs and buying behaviors, aware that "it is essential to build a long-term and stable relationship with customers in today's competitive society" [17, p. 223]. Modern retailers find that "understanding and responding cognitive and emotional expectations serve as the core for developing, nurturing and sustaining lifelong relationships with customers" [11, p. 31]. All this leads to the conclusion that "the theories of exchange that served marketing well for 40 years are giving way to relational concepts" [l, p. 37].

Modern consumers become more individualized and particular in their more sophisticated demands which require from the modern retailers to develop numerous activities of micro-marketing. Competitive position of retailers becomes more dependent on provision of a whole series of services, and creation of new values to consumers is developing in relation to numerous strategic fields: macro and micro locations of stores, development of retail formats and e-commerce forms, different accompanying services, goods assortment and development of own private label, price, technology and integrations between the members in supply chain.

In conditions of increasingly difficult fight over consumers, retailers develop a new management and marketing model. They should incorporate in this new model multiway exchanges which will include, besides the components of "supply package" of goods and services, also numerous social and broader interests of consumers and other stakeholders. Therefore, the estimates "that we should resist routinely using the terms "customer" or "consumer" to describe the person we are trying to influence" [3, p. 36] are entirely valid. The key fight is about the regular, loyal, consumers. Therefore, "retail format, personnel, service and presentation are becoming the critical elements of retail marketing" [4, p. 421].

Special manifestation within the stated scope belongs to a kind of explosion of interest in relationship marketing which evidently becomes "core business activity directed towards setting up, improving, and maintaining successful relational exchanges with consumers, suppliers and even other businesses" [2, p. 585]. Therefore, we come to a reasonable conclusion that "effective retail CM creates synergies by coordinating the marketing efforts of individual SKUs, brands, and suppliers, which can result in both enhanced systemwide decision making and lower costs" [9, p. 22].

Big retail chains define their aim as an overall access to consumers in order to truly offer the values important to consumers and difficult to be copied by their competitors. They show a high level of interest in their consumers' needs, aware that "firms that can obtain privileged information about customer needs by making use of the firm-customer relationship provide more satisfactory offerings than their competitors" [17, p. 223]. There is no doubt that modern retail chains offer in their stores better food quality, along with lower sale prices, in comparison to traditional retailers in their traditional retail stores. Differentiated assortment of retailers' private label products, particularly among hypermarkets and supermarkets, also represents gravitational force strongly attracting consumers to make purchase in those stores. "The role of retail brands has grown gradually and today they are regarded as one of the key strategic factors in the positioning of retail firms" [7, p. 221].

Nevertheless, one should acknowledge that the development of retail chains brings not only positive changes for consumers. At first, all this resulted in decreasing number of small traditional neighborhood stores and specialized ones that many consumers were accustomed to. Social costs rise as the number of stores, in a specific local market, decreases and as they individually become larger. Those social costs are, as follows [8, p. 20]:

- Increased non-work travel time and transportation costs.
- Disruption of important social relations as local grocery stores are closed.
- Contribution to the 'hollowing out' of downtown areas.
- Increased 'suburbanisation' of shopping sites.
- Increased car dependence.
- Substitution away from public transit.

Besides, it is very important to underline that, in analyzed conditions of retail chains development and increase of their power, not only the changes which have direct influence on consumers are significant for their position. Often, consumers' position is much more affected by developments which manifest themselves in other levels of marketing channels, and reflect on, current or future, consumers' position.

There is no doubt that big retail firms, through strengthening their position, are often enabled to impose conditions aiming at or resulting in significant limitations, distortion and prevention of competition on the operating market. The existence of strong, dominant positions of retail chains in marketing channels becomes a threat to healthy competition and market structure.

Misled by the power they own, big retail giants become everyday threat to the potential violation of competition. This is the reason why creation and implementation of competition policy, in efforts to prevent and eliminate irregularities in market functioning, become a priority. In such conditions, competition policy sets consumer protection as its landmark, where "a central concept of competition law is 'market power'" [12, p. 90].

Competition policy has a key role in creation and functioning of modern market. "A central concern of competition policy is that a firm or firms with market power are able, in various ways, to harm consumer welfare, for example by reducing output, raising prices, degrading the quality of products on the market, suppressing innovation and depriving consumers of choice" [16, p. 1]. An adequate legislation in competition protection field, with modern legislation in consumer protection field, and their adequate enforcement, can prevent those situations, protect consumers' position, but also contribute to more rapid and more directive modern market structure development. It is highly important to stress out that the consumer protection development "by protecting and strengthening the position of the consumers and better informing them, enables them to make rational choices and thus strengthen competition in markets" [6, p. 41].

Furthermore, in order to achieve intensive development and protection of competition, it is necessary to adopt and apply rules related to other segment of competition law i.e. rules related to unfair competing by market players, so as to divert the market players to use unfair tactics in ensuring the competition advantages. Those "fair trading/unfair competition laws have traditionally been conceptually different from general competition law principles which seek to prevent the abuse of market power" [10, p. 2]. These are needed in order to prevent legally prohibited forms of competition which are based on abuse of market position, specific level of economic power or informational asymmetry and mislead.

With further consolidation of retail markets and stronger internationalization of big retailers' operations, the issue of competition is more and more in focus. But, there are difficulties to accept the fundamental postulate which says that, just as the power of big market players cannot be abused, so their position cannot be endangered simply because they are big and powerful.

Subject and hypothesis of the research

Subject of this research is effects which modern changes in the sphere of retail cause to the consumers' position. The aim is to evaluate the consequences of the development of retailer chains and increase of their power on the consumers, which requires thorough and comprehensive observation

of positive and negative influences on the position and real interests of consumers. In order to enlighten the mentioned influences, we have conducted the research which should confirm or disprove the defined hypothesis:
H1: Development of retailers and increase of their power is in the interest of consumers.
H2: Parallel to the development of retailers and increase of their power, grows their role in practicing creative marketing functions and in overall process of creating new values to the consumers.
H3: Effects of the development of retail chains and increase of their power require the development of modern trade policy, primarily, state legislation in the field of competition protection, as well as the overall consumer protection, so that the development of retail is in favor, and not to detriment of the real interests of consumers.

A detailed survey of consumers' satisfaction on the market of the Republic of Serbia should, in accordance with the defined elements of choice by which they choose a specific retailer and its retail store for the purchasing purposes, enlighten the level of total consumers' satisfaction in the conditions of significant level of market concentration and significant level of market share of big modern retail chains. The focus is on perceiving the relevance of the individual elements of consumers' choice and differences which exist in regard to consumers' satisfaction with purchasing at big retailers with mostly big, modern and self-service stores and at small and medium-sized retailers with mostly small and classic stores.

In that sense, the whole picture of the consumers' satisfaction will be completed by research on satisfaction indices for individual elements of consumers' choice towards retailers with mostly big, modern and self-service stores and retailers with mostly small and classic stores. This will enable perceiving the concrete advantages and disadvantages of different options which are at consumers' disposal when purchasing.

Also, reaching the conclusions will be contributed by the concrete consumers' replies concerning their preferences as regards the choice between modern and traditional retail formats, but also by concrete replies to the question whether they find that the development of retail chains is in their interest. Research on the opinion of consumers on the activities of the state, through the evaluation of state role in creation of market conditions and application of measures which ensure the benefits for consumers and protect their interests, will indicate which fields of trade policy should be significantly developed in conditions of strengthening the big retail chains.

Research methodology

With a view to researching the effects of the development of big retailers and strengthening of their power to the position of consumers in the marketing channels on the market of the Republic of Serbia, a comprehensive research studies have been conducted in accordance with the defined methodology. To be more precise, the research of consumers' relationships with big retailers and small and medium-sized retailers which operate on the market of the Republic of Serbia, i.e. with "retailers with mostly big, modern and self-service stores" and towards "retailers with mostly small and classic stores" as it was presented to the consumers. Such approach was chosen so as to make it easier for the consumers to reply to and understand the demands in the questionnaire, although it is clear that today big retail chains have in their portfolio fast-growing number of stores with smaller selling space located in the „neighborhood", and that small and medium-sized retailers turn more to investing in big, modern and self-service stores. The obtained results were basis for giving answers to research hypothesis.

In order to perceive consumers' position in new conditions, their attitudes i.e. their opinions, were taken into consideration. In that sense, extensive surveys were conducted on the sample of 600 consumers on the market of the Republic of Serbia. In defining the sample, adequate geographic spread of all market parts, including urban entities of different size, as well as of considerable number of rural and less developed areas were taken into consideration. The focus was on those persons who are solely or mostly responsible for everyday purchasing i.e. purchasing of fast moving consumer goods. The special questionnaire was designed which contained considerable number of questions concerning their relationships with retailers, but also their attitudes towards the activities and role of the state in terms of creating market conditions and applying concrete measures which ensure benefits for consumers and protect their interests. The basic method used for obtaining the data was direct personal interview which was conducted on the basis of the mentioned questionnaire, during the first quarter of 2013. The data collected within the conducted survey research were processed and analyzed using statistical program SPSS 15.0.

In order to perceive the attitude of consumers to the retailers, the consumers' satisfaction with big retailers and small and medium-sized retailers was defined by calculating the satisfaction index of consumers for individual relationship.

The satisfaction indices of consumers were calculated for the following individual relationships *(i=a, b)*:

- consumers with big retailers (a); and
- consumers with small and medium-sized retailers (b).

To calculate the satisfaction indices of consumers for the individual relationship, nine key elements of consumers' choices (*e*=1,2,3,4,5,6,7,8,9) that consumers take into consideration when choosing a certain retailer and its retail store for purchasing purposes was created. For each of them the survey respondents defined:

- relevance of an element (W_{ie}) – points from 1 to 10; and
- satisfaction for an element (V_{ie}) – separately for purchasing at retailers with mostly big, modern and self-services stores and, separately, for purchasing at retailers with mostly small and classic stores – points from 1 to 5.

Table 1 shows the elements of consumers' choice which were used in the questionnaire.

Table 1: Elements of consumers' choice

Elements of consumers' choice (e)
1. Level of retail prices
2. Quality of products
3. Assortment of products
4. Behavior of employees
5. Accessibility and store location
6. Store appearance and comfort of purchasing
7. Services provided to consumers in store
8. Promotional and other marketing activities
9. Terms of payment

With a view to calculating the satisfaction index of consumers for individual relationship, the first step, within the obtained data processing, was normalization of rates of consumers' satisfaction for individual elements of consumers' choice ($V_{i,e}$), as follows:

$$X_{i,e} = 100/4\,(V_{i,e} - 1),$$

(*i*=a, b; *e*=1, 2,..., 9)

(if a consumer rated the level of retail prices with 5, then a value obtained by normalization would be 100, with 4 – 75, with 3 – 50, with 2 – 25 and with 1 – 0).

Satisfaction index of consumer for individual relationship (I_i), was calculated as a weighted average of the obtained normalized satisfaction rates $X_{i,e}$ for each individual element of consumers' choice. Weighting factor was obtained rate of relevance for individual elements (W_{ie}). Calculating satisfaction index of consumer for each individual relationship was performed according to the formula for weighted average:

$$I_i = \frac{\sum w_{i,e} X_{i,e}}{\sum w_{i.e}}.$$

Table 2 illustrates the procedure for calculating satisfaction index.

Table 2: Illustration of procedure for calculating satisfaction index

Element of consumers' choice (e)	Consumers' satisfaction rate for elements (V)	Normalized satisfaction rate (X)	Relevance of elements for consumers' choice (W)	Result
1	3	50	8	400
2	3	50	8	400
3	3	50	10	500
4	3	50	10	500
5	3	50	8	400
6	4	75	9	675
7	2	25	7	175
8	3	50	9	450
9	3	50	10	500
Total			**79**	**4000**

Satisfaction index in the presented case values 4000/79=50.63. The total procedure provides value of satisfaction index in the interval from 0 to 100.

At the end, the average satisfaction indices of consumers, which completed the final picture of satisfaction of all the interviewed consumers with retailers with mostly big, modern and self-service stores, and on the other hand, with retailers with mostly small and classic stores, were calculated on the basis of all the obtained satisfaction indices of interviewed consumers, taking into account individual relationships.

Apart from calculating and analyzing the satisfaction indices of consumers for individual relationship with retailers, the satisfaction indices for each element of consumers' choice for both individual relationships, also underwent the calculation and analysis. The same methodology was applied for this case.

In accordance with the designed questionnaire, consumers rated, within the conducted survey research, also the role of the state concerning the creation of market conditions and application of concrete measures which are ensuring benefits for consumers and protecting their interests. For that purpose, 7 key fields were defined, which are presented in Table 3.

In relation to each of the presented fields, the consumers gave the rates in the interval from 1 to 5 and thus expressed their satisfaction with the role of the state. After that, average rates were calculated for each field, which were the basis for further analysis.

Research results

In the questionnaire they filled out within the conducted survey research, the consumers determined, primarily, relevance of the offered elements for which they chose a specific retailer and its store for purchasing purposes.

In the following step, in accordance with the same elements, the consumers rated the level of satisfaction with making purchase at "retailers with big, modern and self-service stores" and the level of satisfaction with making purchase at "retailers with small and classic stores". This made it possible, in accordance with the defined methodology, to calculate the average satisfaction indices of consumers which represent their general rate of satisfaction with those different kinds of retailers, but also of satisfaction indices for each element of consumers' choice. The results are presented in Table 4.

The obtained data, related to the relevance of the elements of consumers' choice, indicate that the consumers in concern are, in accordance with their very low purchasing power, primarily price-oriented consumers. They are, also, interested in the quality and range of supply, as well as in the possibility of deferred payment. Consumers in Serbia are, primarily for the sake of lower prices, ready to withdraw from purchasing in easily accessible stores located near their place of living and to tolerate certain, and not quite positive, employees' behaviors in retail stores. Store appearance and comfort of purchasing are not so relevant either. Their decision where to make purchase will not be easily changed by promotional and other marketing activities, nor by services provided to consumers in a store, such as preparation of ready meals, and alike.

Apart from that, the obtained satisfaction indices for the elements of consumers' choice gave a clear picture of each of the elements' contribution to the average satisfaction index of consumers, i.e. to the total level of satisfaction which consumers express in relation to different retailers. Consumers are, in accordance with the average satisfaction

Table 3: Fields for rating the role of the state

Fields for rating the role of the state in creating the market conditions and applying the concrete measures which are ensuring benefits for consumers and protecting their interests
1. Fight against abuse of dominant position of retailers
2. Fight against unfair behavior of retailers and grey economy
3. Preventing the decrease of number of small and medium-sized retailers and disappearance of their „neighborhood" stores
4. Incenting the entry of new (international) trade chains on the Serbian market
5. Strengthening consumer protection (consumers education, change of traders' behavior and strengthening the consumer organizations)
6. Providing assistance to consumers in consumer disputes
7. Involving consumers in decision-making processes (to voice consumers' demands)

Table 4: Average satisfaction indices of consumers and satisfaction indices for elements of consumers' choice (rating: 1 the highest, and 9 the lowest satisfaction)

Rank	Elements of consumers' choice	Relevance of elements	Retailers with big, modern and self-service stores		Retailers with small and classic stores	
			Satisfaction index	Rank	Satisfaction index	Rank
1.	Level of retail prices	8.79	72.28	**6**	49.97	**7**
2.	Quality of products	8.44	75.17	**5**	55.59	**3**
3.	Assortment of products	7.94	80.79	**1**	49.53	**8**
4.	Terms of payment	7.77	79.71	**2**	51.34	**4**
5.	Accessibility and store location	7.67	62.55	**9**	73.95	**1**
6.	Behavior of employees	7.15	65.68	**8**	65.31	**2**
7.	Store appearance and comfort of purchasing	6.91	76.22	**3**	50.24	**6**
8.	Promotional and other marketing activities	6.81	75.68	**4**	41.39	**9**
9.	Services provided to consumers in store	6.62	69.25	**7**	50.45	**5**
AVERAGE SATISFACTION INDEX			**73.04**		**54.20**	

index, more satisfied with "retailers with big, modern and self-service stores" (73.04) than with "retailers with small and classic stores" (54.20). However, both have certain advantages preferred by consumers.

It is interesting that what it seems to be the biggest advantage for one of those, represents the biggest disadvantage for the other one. When it comes to "retailers with small and classic stores", accessibility and store location represents the biggest satisfaction to the consumers, while the same element, in terms of "retailers with big, modern and self-service stores", represents the lowest satisfaction to the consumers. Equally, assortment of products which has the highest level of satisfaction in terms of "retailers with big, modern and self-service stores" represents almost the lowest level of satisfaction for consumers in terms of "retailers with small and classic stores".

It should be noted that the satisfaction indices for all the elements of consumers' choice related to "retailers with small and classic stores", except for accessibility and store location, are significantly lower in comparison to the satisfaction indices for the same element for "retailers with big, modern and self-service stores". Also, in terms of level of retail prices, being the element of consumers' choice with the highest relevance, the satisfaction index of consumers for "retailers with big, modern and self-service stores" (72.28) is significantly higher than the one for "retailers with small and classic stores" (49.97).

In accordance with this, the concrete replies of the interviewed consumers to the questions "Is the development of retail chains in the interest of consumers?" and "Do you prefer purchasing in big and modern or in small and classic stores?" do not come as a surprise. The obtained replies are presented in Table 5.

The obtained replies indicate that consumers find that the development of big retail chains is in their interest. To be more precise, 78.67% of them agree with this, while 21.33% of them think opposite. Then, 68.83% of consumers prefer purchasing in big and modern stores which are, primarily, owned by big retail chains, while 31.17% prefer purchasing in small and classic stores.

Finally, with the purpose of analyzing the attitudes of consumers towards the activities of the state of Serbia in the conditions of strengthening of retailers, a survey research on the role of state in creating the modern market conditions was conducted. The consumers' rates with respect to the role of state in creating the modern market conditions and applying the measures which are ensuring the benefits for consumers and protecting their interests were obtained and are presented in Table 6.

Table 5: Consumers' replies to the questions related to the development of big retail chains and choice of purchasing location

Is the development of retail chains in the interest of consumers?		Do you prefer purchasing in big and modern or in small and classic stores?	
Yes	78.67%	In big and modern	68.83%
No	21.33%	In small and classic	31.17%

Table 6: Rates on the role of state, in terms of creating the modern market conditions and applying the measures which are ensuring the benefits for consumers and protecting their interests

1. Incenting the entry of new (international) trade chains on the Serbian market	(2.96)
2. Strengthening consumer protection	(2.89)
3. Providing assistance to consumers in consumer disputes	(2.81)
4. Fight against abuse of dominant position of retailers	(2.29)
5. Fight against unfair behavior of retailers and grey economy	(2.25)
6. Involving consumers in decision-making processes	(2.18)
7. Preventing the decrease of number of small and medium-sized retailers and disappearance of their „neighborhood" stores	(2.11)
AVERAGE RATE	**(2.50)**

The consumers gave the total average rate for the role of state (2.50). It is interesting that the consumers gave the highest rates to the field which concerns incenting the entry of new (international) trade chains on the Serbian market (2.96). This rate, surely, shows their support to the state with respect to the implementation of such activities and their satisfaction with the implemented ones.

Apart from this, it is significant that the consumers rated strengthening the consumer protection in terms of consumers' education, change of retailers' behavior and strengthening the consumer organizations (2.89) and providing assistance to consumers in consumer disputes with retailers (2.81) with rates which are not substantially higher than the average rate. The lower rates than those given to development of consumer protection policy were given to the fight against abuse of dominant position of retailers (2.29) and fight against unfair behavior of retailers and grey economy (2.25). This confirmed that the lack of knowledge and endeavors of the state institutions competent for these issues is quite visible to its citizens. Even greater dissatisfaction consumers show in terms of their involvement in decision-making processes, i.e. the possibility to voice their demands (2.18), followed by the activities of the state in preventing the decrease of number of small and medium-sized retailers and disappearance of their "neighborhood" stores.

Testing the hypotheses

Hypothesis H1:
The research has confirmed the first hypothesis that *"development of retailers and increase of their power is in the interest of consumers"*.

The average satisfaction index of consumers with retailers with mostly big, modern and self-service stores is significantly higher than the one obtained for retailers with mostly small and classic stores.

Confirmation that the consumers show higher level of satisfaction with purchasing at retail stores of the modern retail chains was reflected in their concrete replies to the questions: "Is the development of retail chains in the interest of consumers?" and "Do you prefer purchasing in big and modern or in small and classic stores?" Almost four fifths of the consumers replied that they found that the development of big retail chains was in their interest, and two thirds of them preferred purchasing in big and modern stores to small and classic retail stores characteristic of small and medium-sized, traditional, retailers.

Among others, the research indicates that consumers are, in accordance with their purchasing power, primarily, price-oriented consumers. Judging by the obtained results, in the conditions when the level of retail prices as an element of consumers' choice has the highest relevance, the retailers with mostly big, modern and self-service stores offer visibly higher level of satisfaction in comparison to that one provided by traditional retailers with mostly small and classic stores.

The same goes for the second relevant element of consumers' choice – quality of products, but also to other numerous elements. The only advantage of small and medium-sized retailers, and disadvantage of big retail chains, is the element of consumers' choice which refers to accessibility and store location.

Hypothesis H2:
The research has confirmed the second hypothesis that "parallel to the development of retailers and increase of their power, grows their role in practicing creative marketing

functions and in overall process of creating new values to the consumers".

The fact that big retail chains, by developing and increasing of their power, decisively accepted marketing orientation which includes focus on creation of innovative, new values for all the elements of marketing mix which are superior to those offered by competitors, is confirmed by the satisfaction indices of consumers for all the observed individual elements of consumers' choice which are considerably lower in case of retailers with small and classic stores, with the exception of the issue of accessibility and store location. However, judging by the relevance of the individual elements of consumer's choice, primarily the high level of their price orientation, interest in quality and range of supply, and possibility of deferred payment, consumers on the market of Serbia, which is in the initial phase of consolidation, are ready to withdraw from purchasing, for the sake of lower prices, in easily accessible stores located near their place of living.

Hypothesis H3:

The research has confirmed the third hypothesis that "effects of the development of retail chains and increase of their power require the development of modern trade policy, primarily, state legislation in the field of competition protection, as well as the overall consumer protection, so that the development of retail is in favor, and not to detriment of the real interests of consumers."

Analyzing the obtained consumers' rates with respect to the role of the state in creating market conditions and applying measures which are ensuring the benefits for consumers and protecting their interests in conditions of development of retail chains and increase of their power, we can conclude that consumers' expectations are growing in terms of strengthening the role of the state. This particularly refers to those fields of trade policy which were rated by the consumers with rates under the average one: fight against abuse of dominant position of retailers, fight against unfair behavior of retailers and grey economy, involvement in decision-making processes, as well as preventing the decrease of number of small and medium-sized retailers and disappearance of their "neighborhood" stores.

Annotations

The previously presented analysis of the attitudes and opinions of the consumers surely confirms that the development of big retail chains is in the real favor of consumers. In this situation, they show much higher level of satisfaction with big retailers with mostly big, modern and self-service retail stores, in comparison to small and medium-sized, traditional, retailers with mostly small and classic stores.

Development of retail market and strengthening the competition among modern retail chains, especially in conditions of high price orientation of the consumers, undoubtedly lead to higher possibility of abuse of strong retailers' power, concerning their position and behavior both on supplying and purchasing market. Danger of retail giants' wiliness and threat of them endangering the position of consumers becomes more significant.

In such circumstances we face the rise of expectations related to adequate implementation of state activities in creating the conditions for efficient market competition, modern competition protection and consumer protection. Fast and intensive changes are required, primarily, in the countries which are undergoing the transitional processes in their endeavors of building a modern market.

The analysis itself of the effects of the development of retail chains and increase of their power requires additional research on numerous other dimensions of the current situation. However, the aim of this study was to show that the consumers, even in the early phases of a market development, such as the market of the Republic of Serbia, recognize the benefits of the retail development. Also, the point was to send a strong message to the state institutions on the transition markets, which undergo fast development and "explosion" of retail, that they should endure the pressure of public and political interests which could initiate an overall "witch hunt" on big retail chains and demand limitation of their development. The power of big market players must not be abused against the other players, but their position must not be damaged only because they are big and powerful. As long as they provide higher level of efficiency in marketing channels and benefits for consumers, as well as they compete for their position in fair manner, their freedoms must not be endangered.

Expecting a possible situation of abuse of power by big retail chains, by which they endanger other market players, primarily consumers, a state must precisely define easily applicable and effective mechanisms for prevention and punishment of such behavior. Unfortunately, many states with developed retail market, their state executive branches and legislation still do not keep abreast of these modern trends. This requires, primarily, knowledge and understanding of the processes which are rapidly developing.

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"GAMIFICATION" CONCEPT: THEORETICAL FRAMEWORK AND DESTINATION MARKETING MANAGEMENT PRACTICE

Koncept "gejmifikacije" – teorijski okvir i praktična primena u marketing menadžmentu destinacije

Abstract

The concept of gamification originated from the digital media industry, but found its application in the field of destination management as well. Although appeared six years ago, the concept has been the subject of a limited number of research studies, but none of them in the field of destination marketing and management, which makes this paper one of the pioneering works. As regards the implementation of gamification, it is critical to understand the framework, key elements, main techniques, and to be creative in customizing it to suit the requirements of a specific industry. It is necessary to distinguish gamification from the act of playing that has unstructured nature, as well as from the game that is created for fun and entertainment. Gamification is a marketing instrument used for developing client relationships, taking place in non-typical (non-game) and dynamical game environment. Analyzed case study reveals how the theoretical aspects are being implemented in real situations, creating important effects.

Key words: *gamification, destination management, destination marketing, game, game elements*

Sažetak

Iako je koncept gejmifikacije potekao iz sfere digitalnih medija, svoju primenu je našao i u oblasti menadžmenta destinacija. Ovaj koncept, iako se prvi put pojavio pre šest godina, privukao je pažnju ograničenog broja autora, ali nijednog iz oblasti destinacijskog marketinga i menadžmenta, što ovaj rad svrstava u kategoriju pionirskih. Suštinski bitno za implementaciju gejmifikacije je razumeti osnove, ključne elemente, glavne tehnike, kao i biti kreativan u prilagođavanju koncepta uslovima konkretne industrije. Gejmifikaciju je neophodno razlikovati od samog čina igranja igre, koja je u prirodi nestrukturirana i kreirana za zabavu i razonodu. Gejmifikacija je marketing alat koji se koristi za razvoj odnosa sa potrošačima u okviru netipičnog i dinamičkog okruženja same igre. Analizirana studija slučaja pokazuje na koji način se teorijski utvrđeni principi implementiraju u praksi u realnim situacijama.

Ključne reči: *gejmifikacija, destinacijski menadžment, destinacijski marketing, igra, elementi igre*

Introduction to "gamification"

Tourism represents one of the fastest growing industries in the world today and, despite the world economic crisis, its constant market growth is evident. Last year it was recorded over one billion international tourists. At the same time, when the total commercialization of ICT is present, tourism supply stakeholders are using internet based solutions and tools to anticipate, influence and satisfy the needs and wants of modern tourists. These changes are affecting all aspects of management and marketing and equally all destination stakeholders, from destination management organizations, via hotels and conference centers, to destination management companies, air carriers, and all other direct and indirect providers of tourism experience. The new, modern paradigm of tourism is shifting focus on the experience that tourists are having in a destination. The most successful are those service (experience) providers that are using technology to provide everlasting and unique experiences. Besides the development of online travel agencies, computerized reservation systems, dominance of social media and mobile phones in process of customer relationship management, the gamification concept is becoming more and more important.

Gamification is one of the most important technology trends and challenges that are common for all fields of marketing, and consumer/client communication, and according to predictions over 70% of world biggest companies will have at least one gamified application [8]. Therefore, the paper explains theoretical framework and base of the gamification concept, and analyzes the practical application in the field of tourist destination management, based on the Serbia Convention Bureau case study analysis.

Defining the term "gamification"

The term itself comes from the digital media industry, and that is the reason why terminology and certain words and phrases in the other fields can make this concept hard to understand and difficult to implement outside the digital media industry, including tourism as well. Authors of the paper, with all due respect to the essence and meaning of original terms, custom-fit the gamification concept to the needs of tourism management, and where the customization is not possible the original wording has been used.

The term "gamification" was used for the first time in 2008, but its wider usage started two years later. Authors of academic research papers on one side, and professional industry reports on the other side, agree on the general definition of gamification as "the integration of gaming dynamics in non-gaming environments" [21, p. 6]. In addition, papers of other authors define "gamification as the use of game design elements in non-game contexts" [6, p. 2]. It is possible to conclude that both definitions are using a wide approach, without enough inputs for the people that are facing the gamification for the first time, making it hard to implement in the field of destination management and marketing without prior customization. Also, the term "non-gaming" is not enough clear, so the paper suggests to use alternate term "non-typical environment" in order to make definition more understandable and applicable. Terms like game design and game elements will be analyzed later in the paper.

Further, the gamification concept is different from standard video games. Video games are explicitly designed for entertainment, with content that motivates users to remain engaged in an activity with unparalleled intensity and duration. Thus, game design is the term and approach for making different, non-game product, service, or application [6, p. 2]. Therefore, we can conclude that there are several basic elements of gamification [10, p. 23]: the game, the element, the non-game context and the design. The "game" is characterized by rules, competition and strife towards specified, discrete results by human participants. The "element" represents some basic characteristics of a concrete game. The "non-game context" considers that gamification uses game to satisfy other needs than just entertainment. The "design" is used to describe process of game creation and programing. There are several design levels, like interface design, pattern design, principles design and conceptual design [6, p. 3]. Interface design patterns such as badges, levels, or leaderboards make users change their behavior [5, p.121]. The game design needs to influence the user feedback and motivate them to keep playing.

Based on the previous, we conclude that gamification represents a tool for engaging users in problem solving by motivating them and influencing their behavior. A properly designed game makes user totally focused on interacting with the game, abstracting all other factors outside the game. By using gamification as a tool in the process of business management, the situation will be created where targeted user will pay no attention to competitors and their messages as long as he has the opportunity to play and interact with properly designed game.

According to *Kleinberg* [11] "gamification is the application of gaming concepts to non-game experiences in order to drive desired behavior from an audience". Successful destinations are focused on providing tourists and guests with extraordinary experiences, and therefore we can suggest using gamification to achieve emotional connection and reaction of tourists/users. Probably the most important reason for companies to engage in gamification is its wished-for effect on players' perception of and engagement with the brand, and level of loyalty [21, p. 8]. Gamification is focused on encouraging engagement, motivation, brand awareness and loyalty among players [21, p. 7], [13, p. 16]. A very important aspect of gamification is education – to provide more knowledge on products, service and destination. However, destination management organizations always need to bear in mind the reason why users are engaging in the game.

It is necessary to distinguish gamification from the act of playing that has unstructured nature and from the game that is created for fun and entertainment [6, p. 3]. Modern communication systems, based on internet and other digital communication solutions, make gamification also internet-based, with interactivity and user-generated content as main characteristics.

Buhalis [3] points out that mobile technology is enriching tourist experiences by providing additional platform for gamification. Therefore, we can conclude that mobile technology is another tool for client relationship management. Further, the needs of modern tourists are different from traditional tourists, and therefore traditional tangible attractions (sea, sun, sand, and mountain) are changed for experiences. Tourists are looking for experiences, and various applications of gamification concepts (including the mobile technology platforms) make tourist experience destination in different ways. So, destinations providers will be successful as long as they are using new, different tools, such as gamification, in managing tourist experience.

Gamification concepts make users follow strict structure and behave in correlation with pre-defined rules, so they can respond to different levels of tasks and challenges. Following strict sequences and the hierarchy, users will accomplish final goal. Users are also led by the ambition to collect virtual points, like badges, pins and similar. *Antin* and *Churchill* [2, pp. 2-3] argue that virtual points in social media have five psychological functions: define the aim, provide instructions, earn reputation, retain status/affirmation, and identification with a belonging group. It is also important to monitor the return on investment (ROI) resulting from the gamification. ROI can be measured as an increase in consumer interaction, engagement and loyalty, but also through the lead generation and sales volume increase.

Techniques and elements of gamification

The needs of game users or, more precisely, of the markets which are targeted by gamification can be divided into internal and external. Needs for scoring virtual, but also real awards, as well as needs for earning social reputation, are externally caused. On the other hand, internal are needs for upgrading the game skills.

Gamification can persuade users to change their behavior, using the following techniques [12, p. 3]:

- Reduction: simplifying the complex task in order to convince users to perform the task; if the users believe that by accomplishing that task he will benefit, it is more likely he will play it.
- Tunneling: game direction is pre-defined and guides users using the step-by-step principle; this technique keeps users from losing interest.
- Tailoring: providing all necessary information needed for successful completion of tasks.
- Suggestion: providing users with suggestions at the right time will increase their efficiency; if the suggestion is not relevant, it will not be acknowledged

by user; creating a decision point at the time when it's appropriate to act is the fundamental point for success.

- Self-monitoring: to provide a feedback so the users can change own behavior.
- Conditioning: rewards make user come back and be more satisfied.

Some of the key game elements are [15, p. 145]

- Voluntarism: users choose whether they want to engage or not.
- Inefficiency: the essence of the game is to follow rules, and not to reach the best score in the best possible way.
- Limitations: conditions and environments are given and cannot be changed.
- Safety: game is the safe way to experience real situations (and destinations) in virtual context.
- Interaction and contest: users are interacting and competing among themselves and obstacles.

Serbia Convention Bureau: Profile and background

Serbia Convention Bureau (SCB) was established in May 2007 as one of the departments within the National Tourism Organization of Serbia (NTOS). The initiative for establishment came from the private side, and was led by major congress hotels and agencies. At the moment, SCB has two full-time employees. Mission of the SCB is to attract international meetings and events in order to create direct and indirect effects for partners, stakeholders, and country as a whole [18].

In 2007, the year of SCB's establishment, Serbia was ranked as 64th on the global ranking of destinations attracting international association meetings, while Belgrade was in the 168th position in the world and 92nd in Europe. Six years after, Serbia joined the top 50 international destinations and Belgrade moved to 55th position, making Serbia one of the fastest growing destinations [9, pp. 3-7].

This progress is based on the well-established relationship within the meetings industry providers in the country. Relations with the meetings industry in Serbia are based on the Partnership Program, which was launched in 2008, with the aim to gather representatives from all MICE segments in order to unify efforts in developing and marketing Serbia for the international MICE clients. Due to a lack of private-public partnership legal frames, the Partnership Program allowed SCB to act as an industry-driven destination management organization. One of the basic principles of the Partnership is the golden rule, according to which SCB treats all Partners equally and shares all information among them [17].

The financial sustainability of SCB activities is also pertinent to this case study. SCB is financed by the government, but through NTOS's annual program, and the average annual budget of SCB is approximately one hundred thousand Euros. A detailed analysis of the activities shows that 70% of the SCB budget is taken up by the participation costs at two major travel shows IMEX (Frankfurt, Germany) and EIBTM (Barcelona, Spain), and those include costs of stand space and construction, travel and accommodation costs, and the production of collateral material. The remaining 30% of the budget is used to cover activities like FAM trip organization, site inspections, destination presentations, international cooperation with recognized associations, convention bidding, and cooperation with media [9].

Therefore, it is important to emphasize that these very limited resources, both financial and human, need to be used strategically, and especially on things that will create synergetic benefits and return on investment, as well as activities that will facilitate the process of positioning of Serbia as a meeting destination on an already highly competitive market.

Destination marketing management application in practice: Serbia Convention Bureau case study

Following the major marketing trends and developments in the Serbian ICT sector, SCB decided to go step forward in destination management and client relationship management. Idea was to provide unexpected tool for business travel demand, especially for meeting and incentive planners, a tool that would enhance Serbia position as a meeting destination and that would be based on the gamification principles for the first time applied in the meetings industry.

SCB developed two video games with the specific aim of making the relationship with clients and potential clients more interactive and engaging them in a two-way communication. Another important point in favor of video games is the fact that they make it possible for SCB to engage with the direct consumers of the meeting and incentive products in Serbia, namely the event participants. The first of these games is more focused on the incentive products in Serbia and targets incentive planners as well as general tourists. The second video game targets meeting planners. These games can be said to be successful due to various factors. Firstly, they are certainly the very first video games that are focusing mostly on the meetings industry stakeholders. SCB discovered through its own benchmarking research that there were indeed some destination games but their content related purely to leisure tourism. So these games would make SCB a true pioneer in applying new marketing trends within the meetings industry. Secondly, the games make clients aware of the varying possibilities in Serbia in a completely different, game-related way. Basically, the clients have fun playing the game, but at the same time they learn about Serbia as a meeting and incentive destination. Also, the concept of gamification, as discussed in the literature review, is aimed at facilitating better relations between SCB and its existing and potential clients, especially the new generations of managers (so-called Generation Y or Millennials). Lastly, of course, the games provide a new platform for the promotion of the SCB Partners.

The first video game "Tour de Serbia" is focusing on the incentive products in Serbia. The idea of the game is to race different tracks in the five selected destinations in Serbia that offer the experience and quality to attract international groups. Players/clients are racing against time and obstacles, but at the same time the track is passing major attractions and highlights of a destination. In addition, the vehicle that the player/client can choose for racing in a destination actually matches the complete theme and message of a destination and that is also clearly understandable from the selected highlights and attractions. For example: Belgrade, as the capital of Serbia, is an urban city renowned for its variety of nightlife and therefore the player will race in a sports car, while on the other hand if someone chooses Kopaonik, the major ski resort, he/she will have the opportunity to race in a snowmobile. At the same time destination highlights and attractions that line the path of the race engage the player/client in the type of experience that they can achieve and expect in that particular destination.

The second video game "Make an Event in Serbia" is focused on the meeting, congress and events products in Serbia. The game offers the possibility for the player/client to engage in five selected destinations in Serbia. As was the case in the first game, these destinations were selected on the basis that they provide the experience and quality to host international events in Serbia. Depending on a destination and its capacities, the tasks also vary, from organizing small corporate meetings in the mountain resort to handling big association congresses in the capital city. So, each destination offers a different task of organizing an event within a given budget and using real service providers in that destination, bearing in mind that all given prices (although given in imaginary currency) are based on their real level of service and correct price/quality ratio. In addition, the game features all major service providers in a destination (congress centers, hotels, unusual venues, restaurants) and each presented entity has a profile, which is composed of a brief, meetings-oriented description, several pictures and terms (prices) of use. The game is successfully completed if one passes four major steps. The first step is to choose an event venue. Depending on the size, purpose, price and location of an event, the player can choose a certain venue. The second step is to determine the official hotels for the event. The system is shuffling the room blocks a hotel can provide you, so every time you play the game, you will need to choose another option. In the third step, the player needs to decide on a gala dinner option, while in the fourth step he or she can choose pre and post excursion options. These steps are defined based on market research and SCB's experience with international clients, since they are matching the most common forms of meetings.

To populate the game experience it was important that all companies and service providers that signed the SCB Partnership Program had an equal opportunity of being showcased in the videogames. In addition, in order to make games more attractive and to put more emphasis on the experience within listed destinations, key attractions are also being presented (from city highlights to natural attractions). Partner material was customized from the SCB database in order to fit different communication channels (pictures, texts, contacts).

Creating the first destination video games aimed at the meetings industry clearly gave SCB a good theme for additional country awareness promotion. SCB launched the games during the IMEX Trade Fair in 2012. Demand stakeholders (hosted buyers, corporations, associations, media) had the opportunity both to demonstrate games and be a part of the experience, as well as to comment, suggest and criticize, so the SCB could implement those.

Techniques that the SCB games are using in the process of attracting and retaining client are:

- Reduction: Tour de Serbia complexity is on the low level, and there are no significant problems in reaching finish; it is similar with Make an Event in Serbia, where tasks and budget boundaries are automatically changed with every new log on.
- Tunneling: this technique is most visible within Make an Event in Serbia, where user is passing four, chronologically defined stages.
- Tailoring: introduction texts, Partner profiles, clearly defined steps and levels provide easy information display and search.
- Suggestion: this technique is not present in an explicit manner.
- Self-monitoring: feedback is provided through the notifications when the rules are broken.
- Conditioning: virtual ranking system and the real award system increase client retention and satisfaction.

Table 1: Goals and outcomes of SCB gamification

Goal	Outcome
To develop and implement gamification project (two video games) within given budget	Project realized within given budget; project has followed the financial limitations, including the cost of initial market launch during the IMEX2012 and further customizations based on the client feedback from IMEX
To be present in all major free social media and other internet sites in the period of six months after the project initiation	Developed games were available on the SCB website, SCB Facebook page, as application on Facebook, and on over 100 free online game portals within six months after the project initiation
To surprise and excite clients about doing business with Serbia by using gamification principles, an innovative marketing tool	Reactions to live presentations showed a high level of interest and satisfaction Limitations of set goal is that the outcome could only be followed up during the face-to-face presentation and direct conversations during the IMEX
To use innovative communication channels for the purpose of presentations, promotions and selling meeting capacities of SCB Partners	All SCB Partners are present within games and they have possibility to use these channels to promote and sell their products
To increase awareness in domestic press and trade media of Serbia; no budget planned for this activity	A total of 14 free articles about SCB and its effort to implement gamification; total value of published articles is twice as much as the budget invested in gamification
To increase awareness in international press and trade media; no budget planned for this activity	A total of 32 free articles about SCB and its effort to implement gamification; total value of published articles exceeds the initial development budget four times
To get international attention and to increase the meetings industry recognition; no budget planned for this activity	Over 14 industry presentations and participations in panel sessions in six-month period during the international meetings industry related events
To reach 1,000 users (potential clients) for both games in the first six months and 1,800 in the first twelve months; no budget planned for this activity	1,129 users played the games in the first six months, and 1,812 in the first twelve months
To use gamification as a basis for positioning Serbia as a destination for green meetings	By investing in creating digital channels the budget for printed and other traditional materials is significantly reduced
To create positive image	Feedback from the clients and stakeholders showed better perception and understanding of Serbia as a meeting destination

Results

SCB set the goals that were to be achieved by using gamification (see Table 1). Some of the goals are too generic and their fulfillment is not solely based on gamification, but on integrated marketing activities as well. At the same time, it is hard to define direct effects, since most of the SCB activities are marketing-oriented.

Conclusion

The gamification concept, although originated from the digital media industry, has found the application in the field of business management, including destination management and destination marketing. Only a limited number of authors researched this highly interesting subject, but with no relation to destination management. Therefore, the paper suggests a variety of existing definitions and concepts, and defines gamification as a tool for developing relationship with potential clients and retaining existing clients by using non-typical and dynamical game environment in communicating destination experiences. The essence is to set gamification as a marketing tool for increasing clients' awareness about destinations and to communicate indirectly destination added values, which indirectly implies that the destination sales are done "in between the lines" after being first communicated via the game elements and game design. The case study demonstrates that gamification found its application in destination management. Results show that gamification ROI is positive and multiple. Above all, free promotional texts in media generated multiple returns. In addition, positive destination image has been created in the minds of potential international clients. It is important to note that it is not possible to confirm the gamification effect on lead generation and increase in destination sales.

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