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SOURCES OF VALUE CREATION IN SERVICE GLOBAL VALUE CHAINS

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Abstract

Multiple dimensions of services and service functions in global value chains (GVCs) are not sufficiently explored, particularly so when considering the perspective of Central and East European (CEE) countries as suppliers of services. A comprehensive conceptual framework for the analysis of GVCs is missing as well. The main objective of the paper is to uncover the sources and dynamic of value creation process in service GVCs and identify what makes the ascending value creation in service GVCs possible. Based on case studies exploratory analysis of service GVCs we propose a novel conceptualization of value creation in service GVCs and introduce a new model of spiral dynamic of value creation. The findings show that firms using combination of different value creation logics benefit from multiplying and mastering role of services in GVCs. These findings have implications for service management and value chain strategy beyond service industries and CEE region.

Keywords: service GVC, network-based capabilities, value creation, model of spiral value creation, Central and Eastern Europe (CEE)

JEL Classification: F23, F61, L23, L80, O52

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Introduction

The phenomenon of global value chains (GVCs) emerged due to interlinked changes and trends, most notably liberalisation of capital flows and services trade; declining transportation costs and the advances in information-communication technology (ICT) that rendered possible efficient coordination of production phases at distant locations. In parallel, the boundaries between goods and services production are becoming increasingly blurred. Division of tasks along the production process and specialization to individual functions performed at different global locations is shifting the focus of competition from industries to tasks (Cataneo et al., 2013; Timmer et al., 2013). The emergence of GVCs is a world-wide phenomenon with firms from developed and developing regions performing different functions aligned to their specific advantages. Central and East Europe (CEE) countries have primarily assumed the role of near-shoring locations for manufacturing firms from advanced European economies. In the period 1995–2007 vertical specialisation, defined as the foreign value-added content of exports, increased in all EU economies, however the most in CEE (Leitner and Stehrer, 2014). Some scholars argue that GVCs of multinational companies may provide opportunities for enterprises in developing and emerging market economies to upgrade technologically and in terms of functions through participating in such networks (Gereffi and Fernandez-Stark 2011; Burger et al., 2018).

Until recently research on GVCs focused on fragmentation of value creation process in manufacturing while paying less attention to multi-dimensional role of services in GVCs (Mirodout and Cadestin, 2017). This is in stark contrast to both the weight of services in value added in advanced and emerging market economies and to the increasing integration of services in international trade via different channels. The studies that acknowledge the facilitating role of services for efficient functioning of GVCs in manufacturing apply the analytical framework developed for value creation process in manufacturing, such as for example Porter's value chain (1985) or "smiley curve" (Shih, 2005; Mudambi, 2008). Apart from Stabell and Fjeldstad (1998) who distinguish between three different value configuration models (interaction of services activities in chains, networks and shops), the research of other dimensions of services role in GVCs or pure service GVCs has been disregarded so far (National Board of Trade, 2013; Stephenson and Drake-Brockman, 2014; Mirodout, 2015; Heuser and Matto, 2017; Mirodout and Cadestin, 2017a, 2017b).

Multi-dimensional role of services in GVCs calls for a comprehensive conceptual framework for the analysis of GVCs that is missing in existing theoretical approaches (Amador and Cabral, 2016). The main objective of this paper is first to uncover the sources and dynamic of value creation process in service GVCs given limited applicability of existing analytical frameworks and second to identify what makes the ascending value creation in service GVCs possible. We propose novel conceptualization of value creation in service GVCs and a new model of spiral dynamic of value creation. Understanding these has implications for service management and value chain strategy beyond service industries and CEE region. Few analyses have explored the characteristics of pure service GVCs so far notwithstanding the increasing importance of digital platforms. They empower not only multinational companies but also service start-ups to establish and manage pure service GVCs, to easily source knowledge from around the world to deliver new services (Stephenson, 2012; National Board of Trade, 2013; Jensen and Petersen, 2014; Francois et al., 2015; Lanz and Maurer, 2015; Mirodout, 2016; Stare, 2016).

The perspective of CEE countries as suppliers of services and service activities in GVCs is fairly overlooked in research. Whereas those economies are lagging in services' development behind the advanced economies foreign direct investment (FDI) has accelerated their development that also influenced competitiveness of manufacturing. All the same, positive spillovers of FDI on manufacturing are found in more innovative services (e.g. knowledge-intensive services) and when the companies maintain appropriate level of absorption capacity (Mariotti et al., 2018). Furthermore, manufacturing and services are complementary in both value creation and in international trade. On one hand, service inputs contribute to the efficiency of goods production and exports while on the other hand goods exports may have a significant impact on services exports and vice versa (Broussolle, 2012). Recently, CEE economies experienced a dynamic growth of service industries that was resilient also during the crisis. CEE firms are gradually improving competitiveness of services and also the participation in GVCs with high value-added service activities (such as marketing, R&D). Finally, service firms originating in CEE create pure service GVCs reflecting the increasing resort to advanced technology in sourcing inputs beyond the region. Nevertheless, the potential of services for further internationalization of the CEE is not understood properly. The new OECD-WTO TIVA database on value added in trade at the country level reveals that the share of services in gross exports is much lower than their share in exported value added (OECD, 2013). This evidence motivated our analysis to explore and examine the role of services in GVCs from the firm level perspective.

The paper proceeds by discussing the literature on the existing theoretical approaches for the analysis of value creation in GVCs with a view to reconsider their suitability for exploring multi-dimensional role of services in GVCs. We lay out the methodological approach and present the findings of exploratory case study analysis. The central part addresses the value creation process in pure service GVCs originating in CEE. The firm-level approach reveals how multinational firms organize business functions and how they are inter-linked. We infer that the value creation process in services is not linear and differs from the one in (traditional) manufacturing on account of idiosyncratic characteristics of services. The findings illustrate that CEE services firms combine diverse value creation logics in GVCs. Growing interactions between service functions encourage network-induced orchestration capability of the lead firm that are identified as sources of accelerated value creation resulting in a new model of spiral dynamic of value creation in service GVCs. Finally, the conclusions and directions of future research are proposed.

1. Literature review

Conceptual roots of value chains discussion date back to the late 1970s highlighting that production processes of companies are interlinked through intermediates that participate in the commodity chain of final products (Hopkins and Wallerstein, 1977). Based on strategic management approach Porter (1985) mapped value-added chain as a series of activities performed by individual company at different stages of production and distribution. He emphasised the potential of external suppliers and open chain coordinated by one company. The debate on value chains re-emerged as a research topic in the 1990s, when Stabell and Fjeldstat (1998) developed models of value shop and value network and for each of them identified primary activities, drivers of cost and value. The concept was further extended to

embrace value chains at different global locations¹. Describing the production process in the apparel industry ranging from raw materials to final products the term global commodity chain was coined (Gereffi, 1994). In a more comprehensive way GVC was defined as a set of activities performed by several actors that deliver a product or service, starting from development up to disposal after use (Kaplinsky, 2004).

In the new millennium, the term GVC refers to the chain of diversified activities carried out by companies at different global locations and coordinated by the lead company (Park et al., 2013). The concept is often used in parallel to supply chains, as well as to global production network (GPN). As argued the main difference between the concepts of supply chain and GVC is that the former relates to managerial issues at the company level and the latter concerns industry level developments. The GVC framework may help in explaining global supply chain strategies while benefitting from incorporating company's characteristics that add to managerial insights (Golini et al., 2016). According to Sturgeon, there are two main differences between GVC and GPN² (2001). On one hand, linear structure of GVCs against various kinds of network configurations in GPN depicted as the difference between "snakes" and "spiders" (Baldwin and Venables, 2013) and a narrow focus of GVCs on the governance of inter-firm transactions compared to the interest on the relationships of all relevant actors by GPN on the other hand (Coe et al., 2008). The scholars notice the need to explore in detail the differences pertaining to the boundaries of the firms in terms of organizational and geographical scale, as well as to the type and cooperation patterns of actors and activities longitudinally (Cantwell, 2013; Amador and Cabral, 2016).

The concept of value chain in business literature has experienced a number of adaptations. Initial understanding of value chain as a set of activities that a firm performs in order to deliver a product for the market has been adapted at least in two directions. First, toward greater integration of activities (business functions) within the firm (using equity or non-equity modes), and second toward an increase in external exchange, either as outsourcing or offshoring. The linear linkages between the elements of value chain have seen reshaping towards integrated business functions. The latter could also include external cooperation (with buyers, suppliers, competitors or supporting industries) relying on outsourcing/offshoring or other modes. The need to include marketing and customers in supply chain management emerged when adding services to traditional product offerings. Customers with different preferences for services assume active role in value creation that leads to supply and demand chain management (Bustinza et al., 2013). Stabell and Fjeldstad (1998) extensions of value creation logic in services integrated marketing perspective. Their constructs of value shops and value networks defined the primary activities for each model, without discussing functional distribution, internalization issues or the nature of relationship. In a value network model, the creation of value derives from linking customers, while the core business functions are primarily related to orchestration and look

¹ The term "global" value chains may be misleading since international supply chains are mostly regional within what have been called Factory Asia, Factory Europe and Factory North America (Baldwin and Lopez-Gonzales, 2015).

² Both originate from similar strands of social science literature, however it is observed that the GPN concept is to a large extent associated with the works of economic geographers (Yeung and Coe, 2015) while the GVC concept is closer to scholars of international economics and international business.

more like “network promotion and contract management”, “service provisioning” and “infrastructure operation”. In a “value shop” model, the creation of value emerges from solving customer problems and the primary activities are “problem-finding and acquisition”, “problem solving”, “choice”, “execution” and “control and evaluation”. Jensen and Petersen (2014) further differentiated value creation logics and proposed that they are a predictor of internationalization of services firms.

Generic strategy understands these extensions as different value creation logics and the gateway to creating higher value. The degree to which a firm is successful in creating value by building new resources and/or creating and capturing new value is a function of activities it performs, when it performs them, where it performs them and how it performs them (Porter, 1996; Kaplinsky, 2004). The decisions which activities to perform, the choice of partners and locations, the strategy towards being a first-mover or follower, all the associated trade-offs, the coordination and control of these decisions are critical for breaking or making the value chains. They are leading to specialization and investment in service specific capabilities and to a fragmentation of the value chain, where multiple supply chains enter and exit the firm at different stages and (re)shape networks (Hartman et al., 2006; Mudambi and Venzin, 2010).

Networks secure an environment with unique value creation opportunities that cannot emerge when a firm is acting alone or in bilateral cooperation. They gain network related advantages (externalities) through allocation decisions and business models. Firms develop specific network configurations and relations as a tool to create value and to gain competitive advantage. This demands network management, defined as ongoing coordination of activities between (diverse) organizations (i.e. network members), which provides both structure and mechanisms for joint actions (Parker and Van Alstyne, 2005; Brousseau and Penard, 2006; Riemer and Klein, 2006). Resource based view explains this as a need to develop the competence of managing a network as a strategic resource (Johnson, 1999). In the case of retail firms (buyer-driven) the process is described as a network orchestrating (De Marchi et al., 2014) or as orchestration capability (Ritala et al., 2009). Network management of GVCs is a highly complex process and usually requires coordination of actors with different knowledge and diverse backgrounds. Moreover, network management or GVC governance often consists of both the governance of a network and management within networks – adding to complexity (Perry et al., 2006) and reducing the possibility to replicate. Gereffi, Humphrey and Sturgeon (2005) identified five patterns of GVC governance determined by the complexity of transactions, ability to codify transactions and capabilities in the supply base. They range from market to hierarchy (markets, modular value-chains, relational, captive and hierarchy). Recently, the GVC studies advanced in a number of explored dimensions (Ponte and Surgeon, 2013; Pedersen et al., 2014; De Marchi, et al., 2014; Turkina et al. 2017), yet many questions referring to the role of services remain vague.

Due to the perception of services as a by-product rather than a source of value creation coupled with specific service characteristics, data collection on services has historically suffered from low priority by policy makers, statistical agencies (Sturgeon et al., 2006) and scholars. There are only few studies that decompose GVCs of service companies into detailed functions/activities as is the case in manufacturing. They refer mainly to the splintered value chains of service companies that deliver digital services by integrating diverse service functions provided by globally located suppliers. Film industry is an

example of service GVCs where the films are increasingly co-produced as international collaboration enabled by advanced ICT services, including digitized distribution (Lanz and Mauer, 2015). A more detailed analysis of the pure service GVC of the Swedish company producing video game depicts five phases of value creation process (innovations and R&D; production; distribution; marketing and branding; consumption (National Board of Trade, 2013)³.

A couple of lessons emerge from the cases related to pure service GVCs: firstly, observing the fragmentation of the value chain to activities points to the difficulty of finding the equivalent to physical production. Also, the question arises on the applicability of smile curve model for pure service GVCs due to several specificities. Firstly, in services production process network of activities does not add value in a linear value chain (Baldwin and Venables, 2013). Secondly, some cases illustrate that there is a need to integrate consumption phase into the value chain (e.g. user communities, solution shop) as users contribute to innovation and value creation (Bustinza et al., 2013; National Board of Trade, 2013). Thirdly, the evidence so far suggests that various service activities intensively interact throughout GVCs business processes, but at the same time services activities manage efficient functioning of GVCs (Mirodout, 2016; Mirodout and Cadestin, 2017a, 2017b). Finally, idiosyncratic features of service GVCs (e.g. intangibility, degree of e-enabled trade, type of innovation, etc.) raise questions on the characteristics of value creation process in pure service GVCs.

We address some of these specificities (e.g. sources and conditions for ascending creation of value) in section 4 via exploratory analysis, based on the experience of multiple cases of pure service GVCs. The focus is on value creation process, interaction between activities, development of network management capabilities and their implications for advancement of GVCs. We posit that value creation depends on service activities' interactions and network - based capability development. Next, we assume that mutual encouragement of network induced capabilities via intensive interaction between business activities lead to spiral dynamic in value creation, stimulated by service and/or business model innovation. Using the language of Stabell and Fjeldstat (1998) we predict that the dynamic of value creation depends on the use of diverse value creation logics, i.e. the combination of value shop and network model.

2. Methodology

The incentive for a more detailed empirical analysis of GVCs at the firm level is the recent evidence on the role of services in international trade made visible by the OECD-WTO TIVA database. The concept of trade in value added revealed previously hidden dimensions of services contribution thereby stimulating research on mechanisms through which interaction of business services and service activities may contribute to value creation in firms, GVCs and regions. These data show that the share of services in world trade is much higher in value added terms than in gross terms (Figure no. 1), which is quite the opposite to the share of manufacturing (Low, 2013; Francois et al., 2015; Ceglowski, 2017) and holds not only for developed economies, but also for CEE countries.

³ Empirical applications of "value shop" model are scarce.

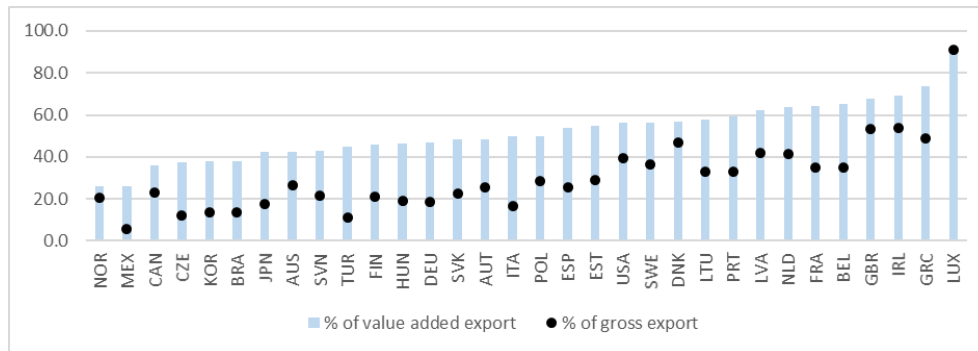


Figure no. 1. Share of services in exports, 2014

Data Source: WIOD, Release 2016.

Recent transformations of the European value chains have influenced the development of service exports in Europe, including the positioning of CEE countries. The latter are increasingly integrated into both, EU-based and global production and distribution networks through reshoring of services in the past decade (Kaminski and Ng, 2005). CEE service firms are catching up in respect of service activities competitiveness that requires a detailed analysis of service GVCs. Besides, the growth of services shares in value added (in total export, in manufacturing exports and in particular in services industries) compared to relatively stable share of services in total exports calls for a more comprehensive understanding of the role of services in value creation within enterprises, as well as the implications of transformation behind this process.

Taking into account these considerations, we conducted a qualitative explorative study of pure services GVCs. Multiple case study approach to service GVCs enabled insights into individual service activities, their interaction and the strategy of combining resources and activities through intra-firm or inter-firm relationship⁴. Case studies can generate context dependent knowledge (Piekkari and Welch, 2011), and CEE context of peripheral region adds to its richness (Weick, 2007) by capturing rapidly changing business environment after EU enlargement, liberalization of services and regionalization of European value chains. Even though scholars recognize different context of these economies they seldom use it as an input for theorizing (Minbaeva, 2016) and thus remains underexploited in international business knowledge creation.

Our paper analyses three globally oriented and rapidly growing service companies originating from CEE. The main selection criteria was a focus on the rapidly growing service firms having experience in international service trade and in global value chain(s). Strategic selection of cases (Ragin, 1992) aimed to provide greatest possible amount of information to understand research questions. Due to complexity of international services exchange in global value chains, we aimed to identify information-rich cases (Eisenhardt and Graebner, 2007). Atypical or extreme cases often reveal more information also, because they activate more actors and more mechanisms than average or random cases (Flyvbjerg, 2006, p.13). “Sampling with maximum variation strategy” (see e.g. Flyvbjerg,

⁴ Case study analysis of service GVCs is a part of a larger research project on “GVCs development and the position of service firms within” financed by the Slovenian Research Agency.

2006), was further applied only for the experience with global value chains, as we aimed to identify at least one case company that is recognised as a lead firm of its own value chain⁵.

The research is based on in-depth face to face interviews⁶ with top and medium management. Semi-structured questionnaires on value creation process allowed to reveal both general and specific characteristics of each case. The interviews were performed in the period from October 2015 to May 2016 and lasted between 90 and 120 minutes per person. In addition, we used secondary sources such as company websites, internal reports, presentations and communication of firms in special workshops, B2B conferences and publicly available data. The results were noted down individually and rewritten in comparative format by using descriptive coding, mapping and matrices⁷. A comparative analysis of case studies of service GVCs served for process-oriented and mechanism-centred approach (Miles and Huberman, 1994). In the selected cases we focus on value creation in individual firms and services, however we consider the broader role of production and innovation networks, intra- and inter-industry linkages as well as opportunities and constraints in knowledge exchange and innovation during value creation process.

The three selected cases⁸ - Company A - a producer of mobile applications; Company B - direct to consumer e-retail service and Company C - a producer of software for labelling solutions - are examples of successful firms, recognised for high growth, often presented at professional events and in media, and their exposure therefore allows greater disclosure of information⁹. Case companies differ in the type of services referring to consumption (intermediate vs. final services), the geographical scope of GVCs (global vs. regional), the size and age of companies, dynamics of internationalization, degree of companies' integration into GVCs and the sequencing of being a lead and a supply firm, as well as experiences with different types of governance within GVCs. The selection of multiple service GVCs allows to seize different characteristics of GVCs and supports the theory building (Eisenhardt, 1989; Yin, 1993).

We addressed following research questions: (i) which are the key functions of value creation in pure service GVCs and how the lead companies are organizing them (across headquarter, foreign affiliates and external partners)? (ii) which capabilities need to be developed by the lead company for establishing and efficient functioning of GVCs? (iii) what are the relations among services activities, management capacity and value creation. Analysing and discussing these questions lead us to put forward a new model of spiral value creation in pure service GVCs.

⁵ Throughout research process of their internationalization pattern we however discovered the development of own GVC also with the other two cases.

⁶ The interview in company A was carried out via skype, while personal meeting was organized in B and C.

⁷ The scripts are available (mostly in Slovenian language) upon request.

⁸ We anonymized the companies' names since one of the examined companies refused to disclose the identity.

⁹ The headquarter of the latter firm is in Slovenia while the other two have headquarters outside Slovenia, but their subsidiaries in Slovenia perform strategic functions.

3. Value creation in services global value chains

Most analyses of fragmentation of international production suggest a linear process through successive stages of value creation, whereas value creation originating from interlinkages or networks remain hidden/unexplained. Linear perceptions of value chains or even the “smile curve” model (used to depict value creation in manufacturing) largely ignored network based advantages, limit the understanding of value creation and may consequently lead to suboptimal decisions in firm-level strategy and policy design. The propositions developed in the next sections, relate to issues identified as deficient for understanding the multidimensional role and impact of services in GVCs. The following section discusses the results of case study research, the existing empirical evidence on services activities in GVCs and the identified gaps in theoretical frameworks of GVCs.

3.1 Interaction of business functions and networked based capability development

As a point of departure, we explored how the lead companies in three service GVCs organize the key activities of value creation and spread them between headquarter, foreign affiliates and external partners¹⁰. Company A operates in a highly competitive industry of mobile applications that requires agility, real-time monitoring of customers’ behaviour and their purchasing patterns. The highest value added is created through three complementary phases, where it is difficult to draw time and location boundary between them. In each phase specialised services are required that are supplied in collaboration between the lead company and subsidiaries at global locations. The first phase consists of idea generation, product development (mobile application) and branding that are closely intertwined. Second phase relates to animation and testing of the product to accommodate it to perceived customers preferences (implemented by subsidiaries and individual professionals with specialised skills). The company applies cross-marketing that automatically links the users of the existing application with an advertisement for a new application for immediate download. With 15 applications the cross-marketing brings high value added¹¹.

Company B is direct-to-consumer e-retailer of consumer goods procured from a large number of global suppliers, an example of buyer-driven GVC. It acts as a leader, brand developer and retailer of goods under its own brand. The manager of Slovenian subsidiary that performs few key functions in GVC of Company B considers the following phases in the business process of GVC as most important: *development and design* of products, *marketing* (implemented by the company’s agency for innovation in direct marketing); *multi-channel distribution*¹² that enables accommodation to different buying habits and local preferences of consumers at different markets; *customer relationship management* via own call centres. The decision to keep the call centres internalized in subsidiaries throughout CEE was rather risky at the time when the competitors largely outsourced/offshored them. The move was nevertheless rewarding as it converted to data centre and contributed to the increased sales, customers’ satisfaction and loyalty with long term benefits.

¹⁰ Detailed data can be obtained from the authors upon request.

¹¹ In October 2016 already 4.9 billion users downloaded the Company A applications for a mobile and was recognized as unicorn company.

¹² TV sales with direct response, internet, printed catalogues, telemarketing via call centers, branded retail stores; network of partnership with biggest retail chains.

The general manager of Company C, a B2B case of producer driven GVC, sees *development of superior quality software* as “*a precondition for high value added*” Development is performed by the lead company, annually investing 20% of revenue into R&D. Other activities significantly contributing to company growth are *marketing and branding* of their services. Innovation in these activities was induced by a marketing professional from UK who joined Company C management. Rethinking the strategic role of marketing in value creation and using the network of different GVC provided the breakthrough in foreign sales (representing 90% of total revenues even before), strengthened market position and raised the price of their solutions. Further, a newly established subsidiary in USA (the largest market) took over the marketing of Company C services in North and South America. *Marketing automation* and new approach to *customers’ relationship management* improved communication and differentiation between three main types of customers. These activities strengthened the company’s forward linkages within its GVCs and augmented significant market expansion. The company started to pay special attention to small contract partners (about 1,000 resellers globally) by introducing specially designed training to resellers under the motto “how to increase your own sales by using Company C software”. Innovation in marketing and introducing training activities for major resellers seem to have a multiplying effect on the sales and the efficiency of Company C GVC.

A matrix of the functions and actors in three cases reveals intensive interactions between business functions in every individual service GVCs, as well as between actors and activities within units. In particular, strong interactions are observed among development, design, innovation and marketing. Knowledge intensive and creative activities are as a rule performed by more than one actor, and each actor performs more than one activity. Actors constantly communicate (or share communication platform) and activities are interrelated in a loop and among themselves. Lead service firm outsource also high value adding activity, often with more than one actor¹³. In fact, services do not move from one actor to another (as in the case in manufacturing), but actors co-create them simultaneously (both online and on site) with a number of interactions and iterations until the service is ready to be launched to the market. Creation of value seem to follow the idea of a “value shop”, though the division of tasks and activities among business functions varies and also changes in time in relation to existing network capacities (network infrastructure), in particular relationships to partners.

The prototype mobile application services of Company A immediately meet consumers and their feedback is part of the co-production process. The development of labelling software in Company C overlaps with testing, development of support services and training. Altogether, these activities produce solutions for customers, partners in GVC and add value for supplier. It is not possible to separate development, innovation, design, training and customer feedback from services production since they overlap in co-creation. Value creation is enabled by increased knowledge flows, intra- and inter-organizational learning, which play crucial role in developing competitive advantage of service firms. These benefits are in line with recent highlights in GVCs literature that services firms act as “lead firms” in shaping the trajectories of global industries, while international business studies have so far focused predominantly on manufacturing firms (De Marchi, et al., 2014).

¹³ In comparison to manufacturing industries where high value-added activities were traditionally rather internalized than outsourced.

The interaction of activities and knowledge flows taking place within a firm and between firms in GVC enable development of a range of new *capabilities*.¹⁴ Creation of value depends on managing activities whereby network management increases the contribution of activities to the final value of service as it scales the developed solutions. The analysed firms serve a large number of markets. Company A can reach consumers in every single country of the world with only 5 subsidiaries thanks to e-distribution (app stores) and highly standardized service. Company C delivers labelling software to over 70 markets with 3 subsidiaries in large developed markets (USA, UK, Germany) and a network of resellers (providing also technical support to customers). On the contrary Company B sells directly to consumers and needs local presence in most markets that it serves (e.g. 20 countries) to manage the delivery, the accompanying technical services and customers' relationships. These firms developed a complex network of relationships, both by entering GVCs of other lead enterprises (as suppliers) and by creating own GVC (as lead firms). Thus, they engaged in learning and innovation in several activities. All three firms have experienced various network types of GVCs governance (captive, relational and modular). In addition to capturing value from GVCs' main activity managers of three firms disclosed several benefits of participating in external GVC as suppliers of other services. They use more than one value creation logic. This help them scaling some of their activities (analytic services, facility services logistic services or network access) across different partners and markets. Company A, for example, beside its core activity sells licences to over 100 companies for using the design of animated characters from their mobile applications for physical products (e.g. accessories, toys, school supplies, food products), which not only increases its revenue, but also promotes its global brand. The subsidiaries of Company B located across CEE countries provide their call centres' services also to other firms selling at the respective markets or doing market research. Thus, it benefits from better utilization of its call centres' capacities (the later requires extensive investment in equipment and training of employees). Company C entered GVCs of companies that integrate its software into printers they produce, GVCs of firms that use their labelling software for various products (e.g. drugs) and sells to buyers of their system solutions.

In this way, service functions' interactions and network management capacities act as multipliers of value creation within the network or GVC. (Figure no. 2)

Proposition 1: Interaction of service activities via network-based management capabilities positively relate to value creation. Their mutual encouragement creates additional value as it allows the use of more than one value creation logic.

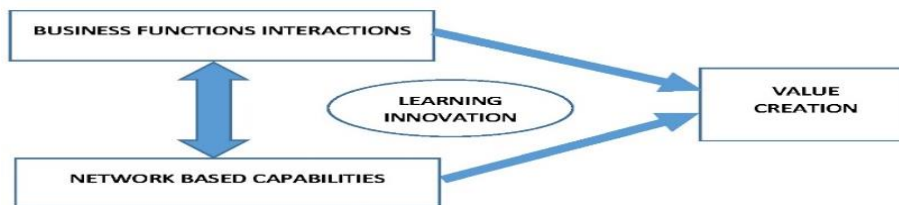


Figure no. 2. Value creation in GVCs

¹⁴ To analyse capability development and the potential for upgrading value it is useful to monitor structural and dynamic factors in GVC. While the former relates to end markets, business enabling environment, vertical and horizontal linkages and supporting markets, the later refers to value chain governance and inter-firm relationship.

Intensity of service interaction and network management capabilities are mutually encouraging, although this relation is neither linear nor simultaneous and deserves further examination. Managers of the examined cases described this relation as “*stairs with obstacles*”¹⁵. The companies A and B reported minor frictions or breaks in value creation, due to “*excessive interlinkages between services activities*” or temporary “*lack of managerial experience or competences*”, but also “*lack of capabilities to recognize adverse selection*”, “*lack of creative talent*”. In contrast, the Company C reported about serious deadlock in value creation due to deficient network management and lack of experience in marketing of services. Hiring experienced marketing expert helped to restore interlinkages among key services activities, speeded up learning process and development of management capabilities. These observations confirm that agile coordination is a challenge.

In their role as suppliers to external GVCs the examined firms “*acquired knowledge on business models, management, marketing approaches and how to better respond to customer needs*” (Company C). In some cases, cooperation in GVCs of other actors “*added to companies’ brand recognition and/or helped them to sell one of their services activities to other firm/GVCs*” (Company B and A). Further, the companies “*exploited the potential of end markets of external GVCs*” (in case A and C as they supply intermediary products), “*the competitors’ value chains*” and “*the growth potential of existing (or newly created) value chains*”. They recognized that the soundness of their network management and infrastructure enables them to combine different value creation logics that can bring sustainable competitive advantage and “*contribute to firms’ differentiation*”. It also helps them to transform own GVC and positions in other GVCs. Networked based capability development leads to new business services (intermediary services, mostly knowledge intensive, e.g. knowledge management), new business models that reshape the role of subsidiaries and activities in GVCs (for example retailers as global buyers) that lead to the emergence of new GVCs and innovation networks. Innovation and re-configuration of GVC offered new sources of competitive advantage, especially through functional upgrading. The observed process of value creation reflects the benefits of combining both models, value shops and value networks resulting in value creation synergy. We describe the implications of process iterations in value creation in a new model of spiral value creation.

3.2 The spiral dynamic of value creation in pure service GVCs

According to the “smile curve” model (Shih, 2005) the phases at the beginning and at the end of the GVC curve contribute the highest value added while the central phase of production is relatively less important. How does this model apply to service companies’ GVCs? The exploratory analysis of multiple cases showed intense cooperation and co-creation of several activities in network and not linear or sequential pattern. The combination of different value creation logics within GVC further creates synergies in value creation. The equivalent to physical production, assembly and logistics in services is a network of activities and their iterated interactions, as noted also by Baldwin and Venables (2013) and the case of Minecraft video game (National Board of Trade, 2013). Some scholars refer to “service networks” instead of service value chains to illustrate the process of fragmentation in services production (Stephenson, 2012; Stephenson and Drake-Brockman, 2014; Lanz and Maurer, 2015; Vargo et al., 2017). The analysis of cases of

¹⁵ Italic fonts represent direct quotations of managers taken from the interviews.

service GVCs uncovers much broader and more dynamic role of service functions/activities. Diverse service activities and value creation logics - on the one hand intensively interact throughout business processes, while on the other hand induce innovations and manage efficient functioning of GVCs in providing services for consumers or businesses (e.g. mobile apps, e-retail and software for labelling).

Departing from our analysis, we discern several limitations of the existing mappings of value chains (matrix tables, flow charts or “smiley curve”). They neither show value creation dynamic, nor non-linear sequencing of phases and their overlapping, or changes and trends in GVCs. By definition, the map is a static snapshot of the value chain structure and hardly adequately presents factors that influence the conduct of individual value chain participants. The visualization of the flows in service value creation from conception to end consumer performed by different functions, as well as the supporting markets and enabling environment could improve understanding of value creation process. With this purpose in mind, we propose a new analytical framework based on the logic of the dynamic process of value creation in service GVCs and visualize it in Figure no. 3.

Proposition 2: Intensive interactions between business functions along with the networked based capability development induce spiral dynamic in value creation and evolution of existing GVCs.

It illustrates how (intermediary) service activities interact with each other in value creation, how these interactions influence the increase of the value creation through innovation, and simultaneously enhance capability development. Non-linear interactions among activities performed by different actors create knowledge flows, that build intangible assets and offer greater scope for innovation and learning-by-doing. Fragmentation of firms' functions into a composite of activities/tasks transforms a firm into a task supplier (regardless of what it ultimately produces). New types of suppliers emerge. Network based management of activities/tasks makes ever more activities/tasks tradable and allows to reveal which tasks (and which interactions of tasks, i.e. solutions) offer the biggest potential for innovation, productivity and competitive advantage. Network management may further scale the solution shops within GVC or across different GVCs. Consequently, the service activities change the process of value creation through a spiral curve and dynamic evolution of GVC. It may also lead to diversification of activities and cross-industry participation in GVC, which is recognized strategy for firms from transition economy (Dikova et al., 2016). In this sense, GVCs are dynamic and evolutionary phenomena.

Interactions among activities leverage existing capabilities (managerial, organizational, analytical, marketing and service quality, branding, etc.) and induce the creation of new ones. Firms combine different value creation logics, which may multiply value, improve performance and create competitive advantage. A case in place from our analysis refers to cross - marketing of Company A that skyrocketed downloads of their mobile applications; multi-channel distribution in Company B that allows to accommodate to consumers' preferences in local markets. The same applies to marketing automation and relationship management in Company C that exponentially increased the number of customers. Improved availability of activities and services at lower costs locally (due to ICT progress, better access and scaling) increases the competitiveness of intermediary services, their outsourcing potential and the development of GVCs in the services sector. This is in line with some of the previous studies exploring how service firm capabilities affect firm performance. Managerial

and organizational capabilities strengthen service quality, marketing capabilities and directly affect firm performance (Cruz-Roz and Conzales-Cros, 2015).

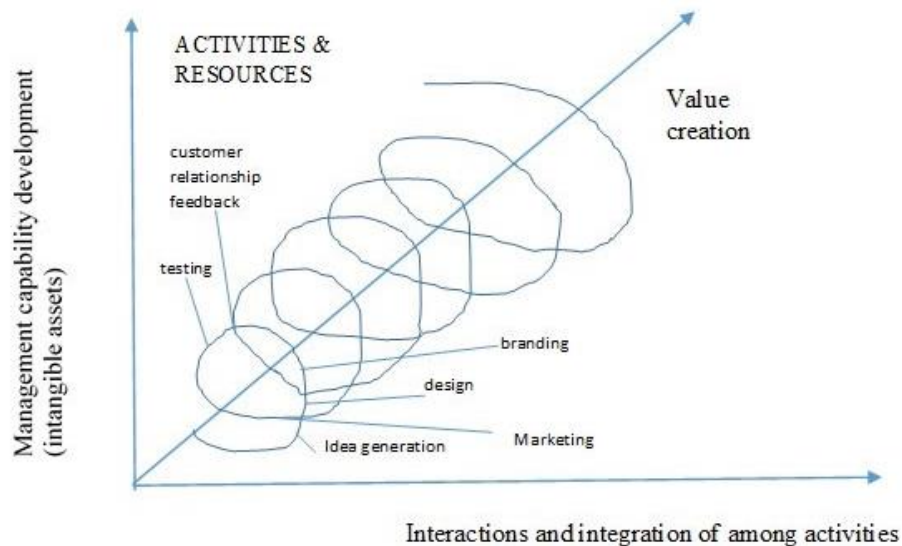


Figure no. 3: The spiral curve of value creation and dynamic evolution of GVCs

4. Discussion

The processes of value creation in service GVCs is complex and evolving. The overview of findings from service GVCs illustrates that the biggest value added refers to development, design, marketing and customer relationship management that are complementary highly interlinked and increasingly fragmented. Our analysis shows that these service activities are mainly performed in cooperation between lead company and its subsidiaries while contract partners enter mostly as suppliers of highly specialised services that require particular skills and competences. The evidence from cases suggests that combining the role of a firm as a leader and a supplier to other GVCs brings synergy in the market outreach, improved efficiency, increased brand value and help to upgrade the functioning of GVCs. Here, one can observe the difference in the outsourcing pattern in service GVCs compared to manufacturing GVCs. Another distinguishing feature is that service GVCs tend to be shorter than in manufacturing, activities more integrated also owing to digitization (digital platforms) that enables co-creation and intensive interaction despite geographical distance. In service GVCs it is not only about outsourcing non-core service functions but also those with high value added that are increasingly specialised or are niche services. This is particularly relevant for GVCs of service SMEs from CEE that lack the capacity to carry out all high value-added tasks.

Service functions are engaged in innovation, knowledge transfer and overall control while capabilities developed within the complex service networks/GVCs enable (re)configuration and mastering of the value creation process. We suggest that the network of activities

stimulate agile coordination and the »orchestration process« aimed to improve firm's efficiency, flexibility and learning underpin dynamic creation of value that may be designed as a spiral. Agile coordination and the development of capabilities may come with a delay after activities' interaction (for example to scale the innovative solution) or vice versa, solution shop may arise after a substantial adaptation of management, therefore variations in spiral shape are expected. One expects variations also at later stages due to rising complexity, increased fragmentation of tasks and international (geographical) spread. Knowledge dynamics and information flows from lead firms to their suppliers differs between GVCs and affect their value creation and upgrading process (De Marchi, 2014). Services are thus not only facilitators (with solution shops) but act also as multipliers and masters of value creation process (with networking orchestration).

The mastering role of services is all the more important on account of several trends, such as dominant share of service industries in value added of advanced and emerging economies, world trade slowdown in recent years and weaker development of GVCs. The latter could also relate to the structural and strategic change in China towards services and away from assembly and manufacturing-led growth (OECD, 2016). In general, flows of non-digital goods and services declined relative to GDP (after a 20 years period of growth) while data flows expanded 45-fold, with an estimated positive contribution to GDP of 10% (McKinsey Global Institute, 2016, 2019)¹⁶. Finally, service industries are at the forefront of value creation via new business models. Studying them in relation to GVCs enables deeper understanding of the processes in service GVCs and generates new knowledge applicable to other industries and economy as a whole.

Conclusions

GVCs and services are changing the nature of value creation. The paper contributes to academic discussion and to new knowledge by responding to the two main research objectives with clear managerial implications. Firstly, what makes the ascending value creation in service GVCs in CEE economies possible? The exploratory analysis demonstrates that firms use combination of different value creation logics and reveals multiplying and mastering role of services in GVCs. Interactions among service activities in value creation stimulate knowledge flows, innovation and network management, the latter emerging as one of the key capabilities in value creation and is assuming the mastering role. The orchestration capabilities (network management) influence the contribution of service activities to the final value creation. Agile orchestration and scaling of diverse solution shops, i.e. combining different value creation logics substantiate competitive advantage of companies. The multiplying role of service activities in value creation arises from interaction and/or (re)configuration of activities within GVCs, and among different GVCs. Better exploitation of different service activities within GVCs in CEE economies could importantly contribute to transformation of businesses and strengthen their role in GVCs.

¹⁶ The "business-to-consumer" (B2C) services represent only about 10% of the economic value proposition of digital services. The other 90% is business-to-business services (B2B), such as "Cloud", supply chain management systems and "industrial Internet" applications (Hardt, 2016; McKinsey, 2011).

Based on the exploration of the patterns of value creation in service GVCs we conceptualized the model of spiral value creation. It originated from a non-linear sequencing of interactions within service GVCs where individual service functions overlap and different value creation logics merge. Variations in spiral dynamic of value creation relate to previous experience, learning and creation of new resources, in particular network-based capabilities. The revealed characteristics help in explaining the dynamic process of value creation in fast growing service firms beyond CEE countries and uncover multiple role of services in GVCs – from enablers, to multipliers and finally masters of GVCs. Further, the analysis contributes new knowledge on the conceptual underpinning of value creation in service GVCs.

Altogether, the results of the analysis bring relevant implications for the management of services and value chain strategies. Managers in particular should be aware of the sources of spiral value creation, made possible through tight interaction of service functions (value shops) and network-based capabilities, resulting in competitive advantage (value networks). The combination of the role of a lead company in GVC with its role of a supplier in others' GVCs brings synergy in value creation. It is revealed as beneficial strategy not only for CEE firms but most likely also in general. The findings are important also for policy shaping in several areas, such as innovation, training, regulation of services related to international flows of tasks, persons and data. Appropriate policy framework can strengthen exploitation of service functions' interactions and consequently of capability development and geographical spread of GVCs. The model of spiral value creation facilitates the apprehension of the potential of value creation by services, which is essential for raising a strong service sector and (ongoing) transformation of GVCs in CEE. The findings open the question whether the revealed role of services and service activities as multipliers and masters may also evolve in manufacturing GVCs. Since, a number of service firms orchestrate manufacturing activities within GVCs (De Baker et al., 2015) this question opens a fertile ground for future research.

The main limitation of our exploratory research refers to a narrow sample of analysed companies. Nonetheless, the selected case studies are information rich and allow the analysis of value creation in GVCs of the companies differing in size, age, geographical outreach, type of services provided and stage of their GVC development. We identified common patterns in interactions between key activities in these firms, as well as a variety of hidden service activities, their fragmentation and upgrading that expand the potential of GVC configuration and network management. These characteristics have an impact on different strategies of the lead firms, diverse types of innovation (in services and service functions, organizational structure, marketing approaches and processes that affect network management) and on various combinations of value creation logics.

Even though these firms are global, their origin reflects the environment of catching-up regions of Europe that requires testing in other socio-economic environments and evaluating how the regional context and participation in GVCs influence the value creation process. Future research calls for additional empirical evidence that could verify the concept of spiral value creation, test how interactions between service activities influence the dynamic of value creation and explore implications of the multiple role of services on firm-level strategies. Finally, highly relevant and timely research needs to explore the changes in GVCs induced by digitization that will further increase the role of service functions. So far, the scenarios and simulations analysing the future of value chains

pertaining to new technologies and related political risks reveal that GVCs tend to shorten, overlap into networks, relocate toward developed economies and concentrate regionally (OECD, 2017; McKinsey, 2019). This has important implications for CEE economies and other emerging economies that are striving to speed up the catching process by increasing participation in GVCs with services and/or higher value-added service functions.

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