

A COMPETENCE-BASED ANALYSIS OF COLLABORATION IN GLOBAL SERVICE SUPPLY CHAINS – DESIGN OF A FRAMEWORK FOR THE IDENTIFICATION AND EVALUATION OF PROBLEMS AND OPTIONS OF LOGISTICS MANAGEMENT IN THE SERVICE SECTOR*

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Acknowledgement

This research was supported by the German Research Foundation (DFG) as part of the Collaborative Research Centre 637 "Autonomous Cooperating Logistic Processes - A Paradigm Shift and its Limitations".

ABSTRACT

The main contribution of this paper is to design a competence-based framework for the analysis of problems and design options in the collaboration of Global Service Supply Chains (GSSC). For GSSC-Management it is required to systematically identify and evaluate typical logistic service problems and prospective design options. For this reason, the competence-based view (CBV) will be closer examined in a GSSC-context as it is assumed to provide an adequate theoretical basis for a conceptual discussion.

IDENTIFICATION OF PROBLEMS IN GSSC

GSSC can be characterized by a structure of different service providers (SPs) collaborating in a world-wide network (Hülsmann and Grapp 2006, pp. 370). Nowadays, GSSC have to face change drivers like hyper-turbulence (e.g. a current change of market demands for services), hyper-competition (e.g. fast development of substitutional services) and especially hyper-linking (i.e. that many different service partners are involved in the GSSC) (D'Aveni 1995, pp. 45–57, Tapscott 1999, Siegele 2002, pp. 18–24) leading to problems of complexity as well as dynamics (Hülsmann and Grapp 2005, pp. 243). That might induce the risk of becoming a so called "locked organization", which "describes dysfunctional and suboptimal situation with a limited choice of possible decisions (Schreyögg, Sydow and Koch 2003, p. 259). The adjective 'dysfunctional' in this context describes the limited ability of a rational decision-making. The immanent lack of information of a decision - the problem of bounded rationality (Simon, 1972: a manager cannot have the complete information about his problem of decision) - is connotated with the adjective 'suboptimal' (Hülsmann and Wycisk 2005a). But, to ensure their existence or even increase their firm benefit (Müller-Stewens and Lechner 2005, pp. 220) GSSC need to build up competitive advantage (e.g. producing new generations of products, increased service level) (Hülsmann et al. 2006) enabled by its management (e.g. producer of a movie production company), which is responsible for the strategic planning, design, control (Ulrich and Fluri 1995, pp. 180) and coordination of its structures (e.g. in media branch: movie production companies and SPs). That means, its main central task is to organize collaboration among its global SPs (i.e. here providing movie production companies with services) (Hülsmann and Grapp 2006, pp. 370).

* The authors are pleased to thank Annett Walter for her very valuable support.

However, the fulfilment of this task seems to become an increasing challenge for GSSC. This might result from the fact that on the one hand GSSC-Management has to fulfill typical (service) logistic goals in a global context (i.e. logistic services have to be allocated and distributed in good quality, in the right quantity, at the exact point in time, at low cost) (Mikus 2003, p. 48). On the other hand it has to consider a fast changing environment which endangers the achievement of these goals (e.g. individual customer preferences, timely restrictions). It seems that in GSSC there is a lack of strategic adaptivity for adequately responding to changing requirements (Sanchez 1993, 1995, 1997), e.g. coping with new service logistic demands. Strategic adaptivity is necessary, aiming at effective as well as efficient service collaboration in GSSC by balancing flexibility (e.g. specific SPs for special service processes) and stability (e.g. SPs for basic service processes) of its structures. From a social systems perspective, flexibility refers to the ability of the system structure to change (Hülsmann and Wycisk 2005b). According to Luhmann these changes are enabled by boundary openness of the system (Luhmann 1973), which absorbs a part of the cited complexity and dynamics of the environment (e.g. information for collaboration of SPs). Stability refers to the ability of the system to keep the information inflow at a manageable level by ensuring a certain level of closure, which means the systems' boundaries closeness (Luhmann 1994). But obviously, under the current phenomena it seems to be quite difficult for GSSC-Management to ensure the required adaptivity (i.e. balancing flexibility and stability of SPs' collaboration in GSSC). Thus, the initially stated competitive advantage (e.g. through performance differences by extraordinary design of its services) over other GSSC can hardly be generated.

An approach of modern management which has recently been gained relevance is the CBV that aims at the explanation of the formation and further existence of performance differences which become evident in above-average returns or manifest themselves in competitive advantage over competitors. In this view, performance differences are mainly explained by competences (Barney 1996, Hamel and Prahalad 1997). Transferring the CBV on a GSSC-perspective, the GSSC-Management itself could be understood as organizational competence (e.g. producer of a movie production company) to bundle and allocate single competences of its SPs (i.e. technical, transportation support services etc.) (Hülsmann and Grapp 2006, pp. 370). An organizational competence in general is understood as "the ability of an organization to sustain coordinated deployments of resources in ways that help the organization to achieve its goals" (Sanchez and Heene 2004, p. 7). By reflecting the above stated problems of GSSC from the perspective of CBV implies that the mentioned task of organizing the collaboration among GSSC's SPs holds competence deficits. There seems to be a dysfunctional bundling and allocation of GSSC-competences (e.g. unsystematic coordination of SPs) taking place on two levels. On the one hand service competences are needed for managing and on the other hand they represent the objective of GSSC, i.e. a meta-competence to coordinate other competences (Bouncken 2003, p. 64). But, which competence problems in fact are there and are relevant for GSSC-collaboration? After Freiling competences have to be analyzed in the sense of action-oriented potentials to realize and activate resource-immanent potentials (Freiling 2004, p. 6). Strategic Competence-based Management (CbM) is considered to be one application of the CBV (Sanchez 2004,

pp. 518-532). CbM includes the systematic identification, evaluation, arrangement, building and leveraging of the competences of a company (e.g. Barney 1996, Thiele 1997, Hamel and Prahalad 1997). In turn, this implies a planned and controlled development and use of competences, but in a turbulent environment is not the case as competences always have to be adapted to changing requirements (Freiling 2004, p. 9). This is a problem as adaptivity of organizational competences is considered to be limited due to inertia of systems to change their structures (Schreyögg and Kliesch 2006, pp. 455). So, which competence-based design options are there for the collaboration in GSSC?

Following this argumentation line, this paper's hypothesis is that GSSC-Management needs a systematic approach to identify and evaluate its problems and options in the collaboration of GSSC described within a framework of a competence-based analysis. It is assumed that thereby it might be possible to act strategically adaptive and finally build up competitive advantage. The following aims result from the research context described above and will be illuminated within this paper:

Aim no. 1: Designing a competence-based framework for analyzing collaboration in GSSC, i.e. providing a basis for systematically identifying and evaluating competence problems and options by using the CBV. **Aim no. 2:** Discussing contributions for collaboration in GSSC of the competence-based framework to GSSC-Management, i.e. systematic analysis of problems and options for GSSC-collaboration by reflecting the CBV.

CONCEPTUAL ATTEMPT OF A COMPETENCE-BASED FRAMEWORK FOR GSSC

For the conceptualization of a framework, which consists of a competence-based analysis, two components of analysis will be considered. On the one hand it shall be possible to systematically identify and evaluate problems of GSSC representing a reference system of logistic service structures. Therefore the "model of an organization as a goal-seeking open system" (Open Systems View) of Sanchez and Heene (Sanchez and Heene 2004, p. 5, Sanchez and Heene 1997, pp. 303-317, Sanchez and Heene 1996, pp. 39-42) will be further examined regarding its potential to analyze GSSC' problems (**Framework Component 1: Competence-based Problem Analysis: CbPA**). On the other hand it is intended to enable the identification and evaluation of new strategic options in GSSC-collaboration for a CbM of GSSC. For the analysis of options the concept of "competence building, maintaining, and leveraging" (Sanchez and Heene 2004, p. 7) to possibly generate competitive advantages for GSSC will be used (**Framework Component 2: Competence-based Option Analysis: CbOA**).

From a science theoretical perspective the aim of scientific research consists of the identification of causes and effects that explain causal relations (Hill et al. 1994, p. 35). This has to be reflected for the design of the framework that will be deduced from the concepts cited above. Each framework component includes essential elements aiming either at the explanation of causal problem (see no. 1 a) to 1 c)) or option (see no. 2 a) to 2 c)) relations which are assumed to enable a competence-based analysis. Furthermore, because GSSC are supposed as object of research its basic characteristics have to be included by giving examples in the framework. **Component 1** consists of three main elements – oriented at Freiling's considerations on the CBV (Freiling 2004, pp. 16-19) – being part of the framework de-

sign: **Element no. 1 a) (resource market): Adaptations and changes result from misfits between the system (i.e. GSSC) and its environment (i.e. competing GSSC or resource holders).** Such kind of discrepancies shall be compensated by making resources accessible which are important for a system's own processes of refinement. Therefore, the system needs the capability to identify adequate resources for sustaining the GSSC's existence or building up sustainable competitive advantages, to integrate respective resources and to generate a maximum benefit from them. **Element no. 1 b) (product market): Balancing between the need of the environment and the supply (i.e. services) of the system is determined by customer preferences.** Therefore, systems must have the capability to develop its resources or competences aimed at the specific market requirements (e.g. logistic services). **Element no. 1 c) (market process): Back coupling processes by the exchange of market data enable changes as well as the development of the system's resource structure.** Therefore, a system has to ensure its capability to provide itself with market relevant know-how for the design of its management processes (e.g. decisions on inventing alternative service logistic concepts in a GSSC). A CbPA itself is executed by examining a specific object of research (e.g. problems of GSSC) regarding elements no. 1 a) to 1 c). Competence problems are assumed if different capabilities to adapt to environmental changes or increasing competitive advantage respectively cannot be generated. Component 1 refers to the concept of organizational competence which understands an organization as competent if it is able to create and distribute "value to all providers of resources essential to maintain the activities of the organization". However, a competent organization requires a Strategic Logic and system design capable to simultaneously building, maintaining, leveraging competences (Sanchez and Heene 2004, p. 7).

This means for the design of **Component 2** a CbOA has to consist of three elements (no. 2 a) to 2 c)) which are considered as parts of the framework (Sanchez and Heene 2004, pp. 7-9): **Element no. 2 a) (competence building):** Processes to using qualitatively new kinds of resources or new abilities to coordinate resources aims at the creation of options for future action in the collaboration of GSSC; **Element no. 2 b) (competence maintenance):** Processes to continually adapting and improving a system's coordinated deployments of resources in order to maintain their effectiveness in achieving the goals of the system aims at the creation of options for taking actions in pursuit of its goals; **Element no. 2 c) (competence leveraging):** Processes to achieving the goals of the system by using resources and coordination abilities qualitatively similar to the ones the system already possesses aims at the creation of options for qualitative or quantitative actions. A CbOA itself is executed by examining an object of research (e.g. options of GSSC) regarding elements no. 2 a) to 2 c). Then, competence options are deduced from the conception of each element.

COMPETENCE-BASED ANALYSIS OF COLLABORATION IN GSSC

The following discussion shall exemplify how far the deduced competence-based framework contributes to analyze collaboration in GSSC by the application of above shown components and their elements. Examining typical GSSC-problems named in the beginning of this paper by a CbPA (elements no. 1 a) to 1 b) results in the

following competence problems, all affecting GSSC-collaboration: **Application Element 1 a) → Competence Problem 1:** The coordination of information for logistic processes in GSSC seems to be difficult if reflected that exchange of information among global SPs has to take place under high timely pressure (Hülsmann and Grapp 2005, pp. 243). A GSSC might have problems to react to environmental changes and distribute only the relevant package of data (e.g. in movie production processes a lot of data has to be processed and despite long-planning periods unexpected situations require ad-hoc decisions (Hülsmann and Grapp 2006, p. 371) weakening its quality because of a limited quantity of information (Bronner 1999, pp. 27-31). **Application Element 1 b) → Competence Problem 2:** Providing a market-adequate range of logistic service offers seems hardly realizable, because the needs of individual customer preferences are different and often the optimal SPs are not available. (e.g. in movie production processes there exist many different and often rapidly changing service needs such as technical, financial, and informational support which increases the pressure to develop and offer new services (Hülsmann and Grapp 2006, p. 371)). **Application Element 1 c) → Competence Problem 3:** This problem is linked to the former ones and shows the current informational risk of undersupply in GSSC as on the one hand data is required *for* the execution of different SPs' service logistic concepts and on the other hand data *of* the service logistic market is needed to adapt to changes (i.e. movie productions a constant monitoring of movie market technology trends as well as customer preferences for movie process optimizations is required).

The different competence problems have shown the present discrepancies between a GSSC as a system and its environment undermining the competent logistic service value creation and distribution of GSSC-Management to all providers of resources or competences. To gain competitive advantage by a competence-based Management of GSSC Freiling actually shows the need for a strategic architecture to close the cited misfits which he explicitly sees in the formation of networks among partners (Freiling 2004, p. 10) – such as SPs in GSSC? This would mean that GSSC already hold fundamental preconditions for coping with its competence problems. Which options for collaboration in GSSC – reflecting inertia in the adaptivity of organizational competences (Schreyögg and Kliesch 2006, pp. 455) result from a CbOA (elements no. 2 a) to 2 c)) of GSSC-collaboration? **Application Element 2 a) → Competence Option 1:** an option for future actions in GSSC could be generated by the acquisition of intangible assets, e.g. special know-how of new logistic SPs would support the competent design of logistic processes. **Application Element 2 b) → Competence Option 2:** an option for taking actions in pursuit of GSSC-goals could be generated by the continuous optimization of operations meaning the improvement of service logistic processes. **Application Element 2 c) → Competence Option 3:** an option for qualitative actions of collaboration in GSSC could be gained by increasing the level of service logistic processes, e.g. meaning their efficient as well as effective service design. Transferring this view of GSSC-options on movie productions - as a context of service logistics - could be understood from a portfolio perspective. It refers to a pool of competences (Bellini et al. 2000, pp. 1, Purcell and Gregory 2000, pp. 161). A portfolio of competences is needed for the coordination in regard to specific requirements of movie production projects which need a certain quantity and quality of resources (Gaitanides 2001, pp. 167-170).

New competences are acquired if necessary, then are available for specific short-time demands (operative level: e.g. ensuring transportation processes) as well as for long-term requirements (strategic level: e.g. ensuring availability of main responsible persons like producer, director). Finally, on the basis of such a portfolio the aimed and thereby leveraging of service logistics competences for movie production processes is assumed to be possible.

CONCLUSION

In general, the competence-based framework for the analysis of GSSC presumably seems to lead to gain competitive advantage over other GSSC-competitors, because it holds a systematic approach integrating both the analysis of problems and generation of options for collaboration in GSSC to survive or even dominate on the service logistic market. But, it has to be stated that only a first attempt to design a competence-based framework for the analysis of GSSC-collaboration has been shown. Future research should focus on a more detailed formulation of the framework's elements to increase the broader applicability of this analysis tool.

REFERENCES

- Barney JB (1996) "Gaining and Sustaining Competitive Advantage", Reading, Mass. et al., USA: Addison-Wesley Pub. Co.
- Bellini E et al. (2000) "Strategic Paths of Small Firms: A Competence-based Approach to Academic Spin-offs", in Sanchez R & Heene A (eds) Research in Competence-Based Management, Stanford, CO, USA: JAI Press, pp. 1-22.
- Bouncken R (2003) "Organisationale Metakompetenzen – Theorie, Wirkungszusammenhänge, Ausprägungsformen und Identifikation", Wiesbaden: DUV.
- Bronner R (1999) "Planung und Entscheidung", Munich: Oldenbourg.
- D'Aveni RA (1995) "Coping with Hypercompetition: Utilizing the New 7S's Framework", in Academy of Management Executive, Vol 9, No 3, pp. 45-57.
- Freiling J (2004) "Kompetenzansatz – Competence-based View der Unternehmung", in Die Unternehmung, Vol 58, No 1, pp. 5 - 25.
- Gaitanides M (2001) "Ökonomie des Spielfilms", Munich: Fischer.
- Hamel G, Prahalad CK (1997) "Wettlauf um die Zukunft – Wie Sie mit bahnbrechenden Strategien die Kontrolle über ihre Branche gewinnen und die Märkte von morgen schaffen", Vienna, Austria: Ueberreuter.
- Hill W, Fehlbaum R, Ulrich P (1994) "Organisationslehre 1 – Ziele, Instrumente und Bedingungen der Organisation sozialer Systeme", Bern et al.: Verlag Paul Haupt.
- Hülsmann M, Grapp J (2005) "Autonomous Cooperation in International-Supply-Networks – The Need for a Shift from Centralized Planning to Decentralized Decision Making in Logistic Processes", 10th ISL - Innovations in global Supply Chain Networks, 03-05 July 2005, Lisbon, Portugal, in Conference Proceedings, Pawar KS, Lalwani CS, de Carvalho JC, Muffatto M (eds), Loughborough, UK, pp. 243-249.
- Hülsmann M, Grapp J (2006) "Why Do Service Logistics Need Self-Organization - A Competence-based Analysis of Global Supply Chains in the Movie Production Industry", 4th International Logistics and Supply Chain Congress – The Era of Collaboration Through Supply Chain Networks, 29 November-01 December 2006, Izmir, Turkey, in Conference Proceedings, Baltacioglu T (ed), pp. 370-378.
- Hülsmann M, Wycisk C (2005a) "Unlocking Organizations through Autonomous Cooperation - Applied and Evaluated Principles of Self-Organization in Business Structures", The 21st EGOS Colloquium. 30 June-02 July 2005, Berlin, web-publication, 25 pages.

- Hülsmann M, Wycisk C (2005b) "Contributions of the Concept of Self-organization for a Strategic Competence-management", The 7th International Conference on Competence-Based Management: Value Creation Through Competence-Building and Leveraging, 02-04 June 2005, Antwerp, Belgium, web-publication, 20 pages.
- Luhmann N (1973) "Zweckbegriff und Systemrationalität", Frankfurt am Main: Suhrkamp.
- Luhmann N (1994) "Soziale Systeme: Grundriss einer allgemeinen Theorie", Frankfurt am Main: Suhrkamp.
- Mikus B (2003) "Strategisches Logistikmanagement – Ein markt-, prozess- und ressourcenorientiertes Konzept", Wiesbaden: DUV in Cooperation with Gabler.
- Müller-Stewens and Lechner C (2005) "Strategisches Management: wie strategische Initiativen zum Wandel führen", Schäffer-Poeschel: Stuttgart.
- Purcell KJ, Gregory MJ (2000) "The Development and Application of a Process to Analyze the Strategic Management of Organizational Competences", in Sanchez R, Heene A (eds) *Implementing Competence-Based Strategies*, Stanford, Connecticut, USA, pp. 161-198.
- Sanchez R (1993) "Strategic Flexibility, Firm Organization, and Managerial Work in Dynamic Markets: A Strategic Options Perspective", in *Advances in Strategic Management*, Vol 9, pp. 251-291.
- Sanchez R (1995) "Strategic Flexibility in Product Competition", in *Strategic Management Journal*, Vol 16, pp. 135-159.
- Sanchez R (1997) "Preparing for an Uncertain Future: Managing Organizations for Strategic Flexibility", in *International Studies of Management & Organization*, Vol 27, No 2, pp. 71-94.
- Sanchez R (2004) "Understanding Competence-based Management: Identifying and Managing Five Modes of Competence", in *Journal of Business Research*, Vol 57, pp. 518 -532.
- Sanchez R, Heene A (1996) "A Systems View of the Firm in Competence-based Competition", in Sanchez R, Heene A, Thomas H (eds) *Dynamics of Competence-Based Competition*, Oxford, UK, pp. 39-42.
- Sanchez R, Heene A (1997) "Reinventing Strategic Management – New Theory and Practice for Competence-based Competition", in *European Management Journal*, Vol 15, No 3, pp. 303-317.
- Sanchez R, Heene A (2004) "The New Strategic Management: Organization, Competition and Competence", New York, USA: Wiley.
- Schreyögg G, Kliesch M (2006) "Zur Dynamisierung Organisationaler Kompetenzen – ‚Dynamic Capabilities‘ als Lösungsansatz", *zfbf – Zeitschrift für betriebswirtschaftliche Forschung*, Vol 58, pp. 455 - 476.
- Schreyögg G, Sydow J, Koch J (2003) "Organisatorische Pfade - Von der Pfadabhängigkeit zur Pfadkreation?" in: Schreyögg G, Sydow J. (eds) *Managementforschung 13*, Wiesbaden: Gabler, pp. 257-294.
- Siegele L (2002) "How About Now? - A Survey of the Real-time Economy", *The Economist*, Vol 362, pp. 18 - 24.
- Simon HA (1972) "Theories of Bounded Rationality", in: McGuire C, B, Radner R. (eds) *Decision and Organization*, Amsterdam: North Holland Publications, pp. 161-172.
- Tapscott D (1999) "Creating Value in the Network Economy", in Harvard Business School Press, Boston, Mass, USA.
- Thiele (1997) "Kernkompetenzorientierte Unternehmensstrukturen – Ansätze zur Neugestaltung von Geschäftsbereichorganisationen", Wiesbaden: DUV.
- Ulrich P, Fluri E (1995) "Management – Eine konzentrierte Einführung", Bern et al.: Verlag Paul Haupt.