

# Problems in the Offset-Caused Value Chain Network-How Could Looks Like a Concept for Eliminating This?

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## Abstract

Stimulated by the requisition to linked necessary purchases abroad with the largest possible return of investment let for years the so-called offset businesses grow. These requests for offset-obligations occurs mainly in the area of arms imports and covers the full range of industrial and commercial benefits as incentives or conditions for the purchase of military goods and services. The companies affected by the implementation of such complex offset-obligations are then often overstrained. In particular, because offset requires at the lower stages of the value chain a temporary linking and steering of common business processes. This necessary integration of the various business processes leads at all process levels to problems due to the very different required Offset-Readiness of the involved companies. The aim of this paper is the development of a concept for the temporary linking and steering of offset-affected business processes in the Value Chain Network. This examination was triggered through an overall research project on the impact of offset to the business processes of Small and Medium Enterprises. During the necessary Pre-Study for this research project, first indications appear that by offset affected companies in the lower stages of the value chain have problems with the necessary temporary linking and steering of joint business processes. The paper concludes with a new developed concept for the temporary linking and steering of offset-affected business processes. The pro's and con's for this proposed concept are described as well and from today's point of view can be seen that further investigations required.

**Keywords:** Offset, Value chain network, Business processes, Business process management

## 1. Introduction

### 1.1 Increasing Offset-Obligations – A Problem for the affected Value Chain Network

The practice of countries demanding the discharge of offset-obligations as a prerequisite to foreign firms participation in major civilian or defense contracts is not new. However, recent years have seen a number of countries, both developed and developing, apply offsets and industrial participation measures at an ever-growing scale and complexity as governments worldwide use their purchasing power to develop local capacities and channelize investments and technology to favored domestic sectors.

Academic views on offset obligation as a compulsory requirement for participating in defense acquisition programs range from “(...) the need for relatively advanced domestic industry to exist in order to absorb and capitalize on benefits of offsets,” to the other end of the spectrum of views, which hold that “(...) offsets result in increased cost of equipment, though with no significant benefits for the purchasing countries” (Behera, 2006). Much as there is a large divergence of views on the impact of offsets in achieving their stated goal, the fact remains that offset demands are increasing in all regions of the world (BIS 2007).

A study by Anderson and Moores (2013) expose that greater military investment in the world’s developing countries will lead defence contractors to accrue offset-obligations valued at almost USD 100 billion in markets beyond the European Union and United States over the next ten years. The global military export market, meanwhile, has grown substantially following the worldwide economic crisis post-2008, even while global headline procurement spending has dipped.

According to the in Table 1 displayed data of Anderson and Moores (2013) shows a forecast that the world defence export market (therefore excluding all indigenous defence production) increased in value from USD 34 billion in 2008 to USD 47 billion in 2012. Between 2010 and 2012, however, world procurement spending dipped by USD 12.89 billion to USD 277 billion. While this may appear superficially counter-intuitive, the divergence of procurement spending overall and the export market size is partly explained by the growth of investment in recent years by emerging markets ill-equipped at present to meet military materiel requirements through indigenous sources. Ongoing export market growth is foreseen (Anderson and Moores forecasts an increase to USD 48 billion by 2014).

Table 1. Forecast of world defence export market (Anderson and Moores, 2013, p.3)

	2010	2011	2012	2013	2014	2015
Military export production (USD billions)	39.1	44.4	47.1	44.5	48.0	46.5
Global procurement budgets (USD billions)	290.63	295.64	277.74	290.16	301.12	310.81

It is the combination of greater spending with international suppliers and the greater use of offset in the world markets that explains the significant obligations which contractors are expected to face this decade.

### *1.2 Problem Description*

Today it can be estimated that around 80 countries impose some form of offset-obligations on suppliers of military materiel and services, while fully 23 countries introduced formal, codified offset-programs between 2000 and 2011 alone. It can be concluded that almost nothing is sold without offset. Offset, has been used in all major programs in the form of direct and indirect offset. Entering global supply chains is challenging without offset.

In addition, the large global arms companies the so-called Lead System Integrator (LSI) try to pass their offset-obligations into the deeper stages of its value chain. Reasons for this are:

- Security of Supply, independence of Original Equipment Manufacturer (OEM)
- Risk sharing
- Value saving

The with this behavior confronted companies (Tier 1 to n Supplier) are then often overstrained already with the execution of such complex offset-obligations. In particular, because offset requires at lower levels of the value chain the temporary linking and steering of common business processes. According to Hahn (2000) is the design, execution and coordination of a Value Chain the most difficult and critical to success factor in the Value Chain Management. Specifically, the definition and coordination of joint business processes in the by offset-obligation caused global Value Chain Network faced smaller companies with unsolvable problems. The necessary integration of the various Business Processes leads in all process levels to problems due to the very different required Offset-Readiness of the involved companies.

### *1.3 Need for Action*

The increasing of offset-obligations leads to more complex and sometimes enforced coupling Value Chain Networks (VCN) with global character. Due to the fact that this phenomenon will increase in this decade, it is important to identify the associated challenges. Therefore, it is imperative to develop a concept which allows the by offset-affected companies to link and steer their BPs temporarily. Only through such a concept, costs can be avoided which are caused by problems in such a temporary VCN.

## **2. Theoretical Framework**

### *2.1 Offset – A Brief Introduction*

Countertrade is an covering term that has come to mean all forms of reciprocal or compensatory trade arrangements. Specific forms of countertrade include barter, counter-purchase, buy-back and offset.

In the case of offset commits the seller to the buyer's government to make investments in the country, such as local purchases of goods and services, local employment, domestic content, co-production and technology transfer. Offset occurs when the seller agrees to buy (or cause third parties to buy) products or services from the buyer (or third parties in the buyer's country) or to make joint venture investments in the buyer's country. In essence, offsets are concessions required by foreign governments as conditions of the sale. They are especially prevalent for government funded infrastructure projects, such as the building of roads, bridges, water treatment plants, etc. and in the purchase of military hardware. Such offsets are mandated by governments as a way of maintaining domestic employment, developing an industrial base or an underdeveloped segment of the economy, acquiring modern technology, training, and education, as well as assisting with balance of payments issues.

Offset agreements specify the monetary threshold for offsets, the level of offset required (which is normally expressed as a percentage of the original sales contract), the involved offset sector- civilian and/or defense, and the extent of multipliers. Multipliers are important because countries use them to encourage contractors to undertake more highly desirable activities. For example, if a contractor assists a country in a USD 1 million export of a product of particular importance, the exporting country could offer a multiplier of 10, thereby increasing the amount of the offset credit to USD 10 million. Agreements will also include milestones for measuring compliance, the penalty for non-compliance, any required oversight procedures, and how long the seller-contractor has to satisfy their obligation.

Offset arrangements can involve both direct and indirect obligations. Direct offsets comprise activities related to the subject of the contract, such as transferring dollars and/or work and technology to the recipient country. This is often accomplished through licensing or joint production. Indirect offset obligations are all other types of activities, services, technologies, know-how, etc. that create new products or rejuvenate existing ones, create new jobs, create value added, improve competitiveness, and increase export opportunities. Fulfilling indirect offset obligations has become an increasingly arduous task for defense contractors who must compete with civilian contractors, as well as with independent investors, forever scarcer viable commercial opportunities. Unfilled global offsets were expected to reach USD 100 billion by 2010 (Tricolom, 2009).

## *2.2 Value Chain Network*

There are a variety of different definitions of Value Chain Networks. According to Pfeiffer and Weiss are value networks defined in general as "(...)a lot of companies and institutions, between defined relations exists" (Pfeiffer and Weiss, 1994, p . 85). The companies involved in such a VCN effectively acting as value units, who contribute their specific expertise and resources in the network in order to optimize the overall network-related value.

The aim of a VCN is the realization of collaborative competitive advantage. Due to the fact that each participating company contributes its specific core competencies in the network group, the conflict between a high degree of specialization on the one hand and a wider, more

diverse range of services on the other can be solved. In a network, advantages of flexible task allocation and capacity utilization at the network level with specialization advantages at the level of the value units (economies of scale and economies of scope) can be connected. This works even better, when the individual competencies are complementary to each other. Examples of successful implementation of this idea are provided by the so-called Production-Networks, or by several Logistic-Networks (see Pfohl, 2001, p.35). The generic understanding of the value or the value chain as the basis of a VCN is minted by Johnston and Lawrence (1988). The value chain is defined there as “(...) the various steps a good or service goes through from raw material to final consumption” (Johnston and Lawrence, 1988, p. 96). In a value chain, the successive activities for the creation of a product or performance are linked. The link refers not only to the activities in a company but - according to a Value Chain Network – beyond the corporate boundaries (Ritsch, 2004, p.12). In many cases the Value Chain Network is also used as a synonym for the value chain according to Porter. Porter (1985) divided a business in strategically relevant activities in order to analyze them in each case with respect to possible competitive advantages (see Porter, 2000, p. 69).

A value chain is a chain of activities that a firm operating in a specific industry performs in order to deliver a valuable product or service for the market. The concept comes from business management and was first described and popularized by Michael Porter in his 1985 best-seller, *Competitive Advantage: Creating and Sustaining Superior Performance* (Porter, 1985). The idea of the value chain is based on the process view of organizations, the idea of seeing a manufacturing (or service) organization as a system, made up of subsystems each with inputs, transformation processes and outputs the so-called business processes. Inputs, transformation processes, and outputs involve the acquisition and consumption of resources - money, labor, materials, equipment, buildings, land, administration and management the so-called business process management (BPM). How value chain activities are carried out determines costs and affects profits.

As part of a value chain, the value-added activities of the individual companies are represented systematized. Relevant for value creating are all activities that are for the benefit of customers (Baum et al., 2004, p. 64). This paper therefore uses the following working definition: A value network is a hybrid form of organization in which are legally independent companies from successive stages of the value chain are collaborating.

The theoretical construct VCN can be found in different forms in the reality. In particular, in the field of the industry are appropriate VCNs are quickly apparent. An industry value-chain is a physical representation of the various processes involved in producing goods (and services), starting with raw materials and ending with the delivered product. It is based on the notion of value-added at the link level. The sum total of link-level value-added yields total value. So how looks like a VCN from the defense industry? The in the Figure 1 shown VCN illustrates exemplary on the example of the P75 Scorpène Submarine Deal, which is contracted between India and France, the individual levels of a by offset-obligations formed VCN.

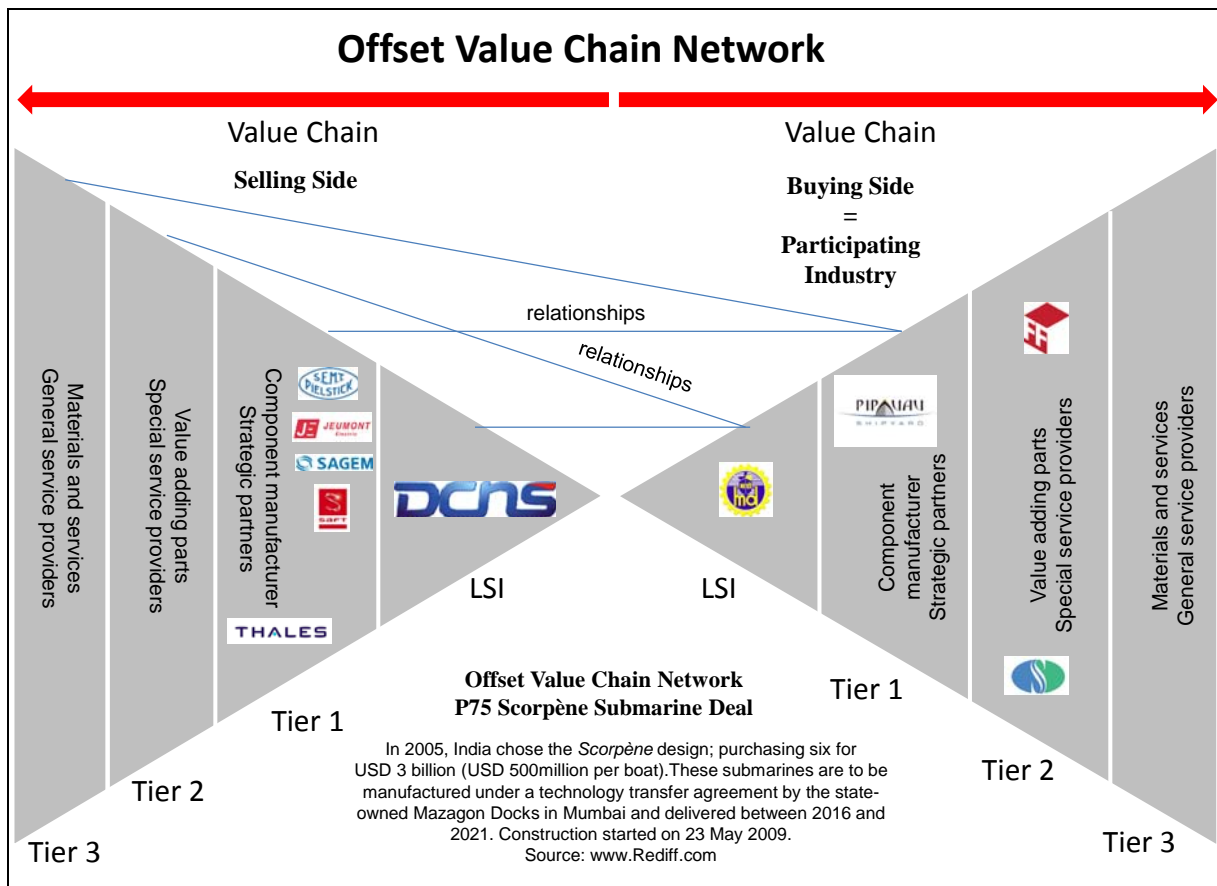


Figure 1. Example of an Offset Value Chain Network in the defence industry

In addition to the assignment of a VCN to individual sectors and industries can be also used other distinguishing characteristics. "The possibilities for the typology of networks are limitless" (Sydow, 2006, p. 393). In the variety of different typing variants, two differentiation criteria are very significantly (see Hess, 1999, p 226):

- With respect to the form of steering in the VCN can be made a difference between a monocentric and a polycentric steering. Monocentric steering means that there is a steering unit of value added in a polycentric steering can take over the steering function in the extreme, by each unit of value added.
- The second distinguishing feature relates to the duration of the Value Chain Network. This feature does not apply to the communication relationships of the units, but on the common planning horizon of added value. Stable networks are planned to address long-term cooperation, dynamic networks arise only for a specific service provision.

If both of these dimensions presented in a portfolio presentation it results in a grid in which real Types of VCN can be assigned. In the case of an through offset-obligations raised VCN could be classify this as a Project-VCN because of its temporary existence, which needs then a form of monocentric steering (Figure 2).



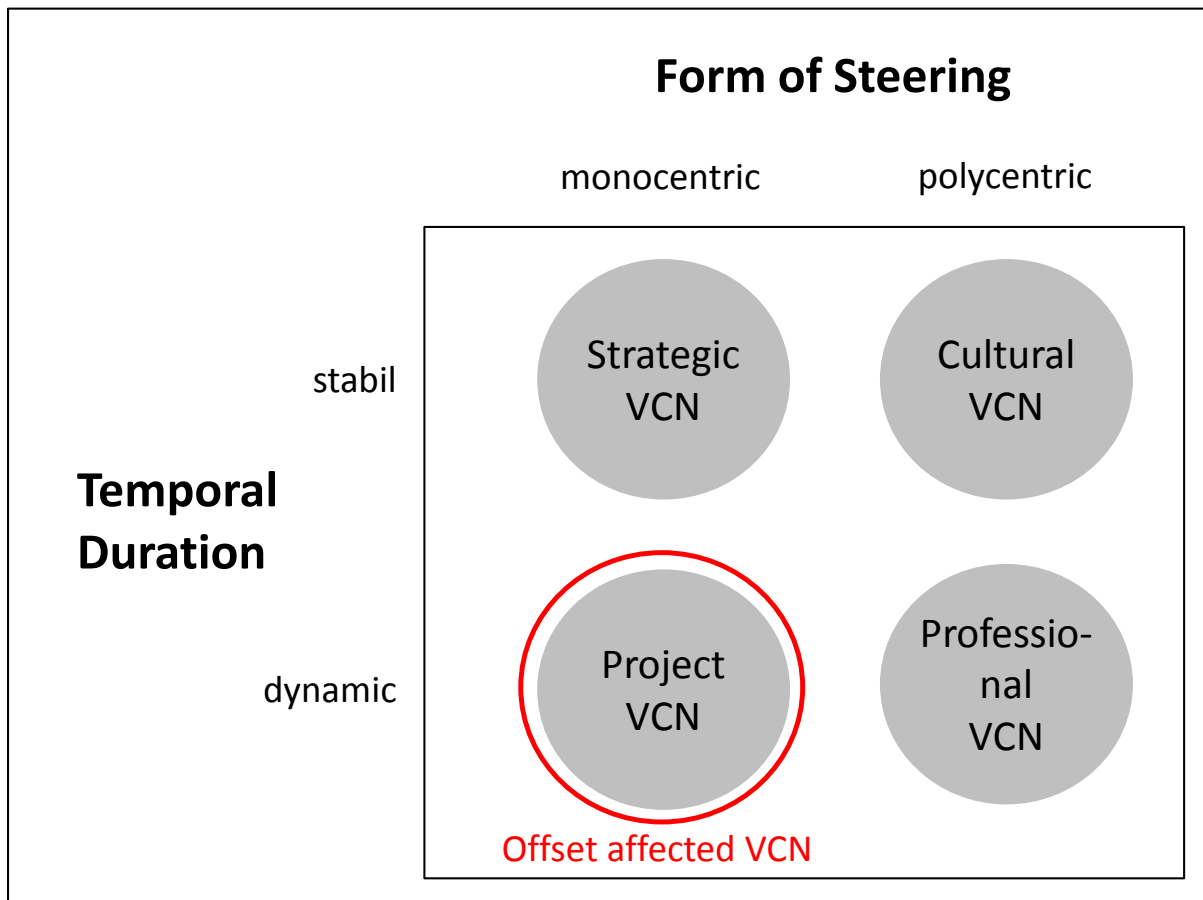


Figure 2. Types of Value Chain Networks (Bach et al., p. 5)

Other distinctions in homogeneous or heterogeneous Value Chain Networks can be made. These based on the size (number of participants) or by the distinction on the similarity of the involved network companies. In the variant of the strategic networks the network is coordinated by the so-called focus company. The value is in this case often generated in the context of a large core company (often the LSI), whereby every network companies bringing different resources and competencies in the common system. The cooperation is based mostly on formally closed, rather long-term cooperation agreements (offset-contract) between the involved value units. These allow an above-average using of hierarchical coordination mechanisms. Due to the agreements investments are made in network-specific resources and there is an specified intensive transfer of technology between the parties. This can be interpreted in the same way as a fixed agreement on capacities, etc. as a pre-support. In spite of the cooperation agreements. Therefore, also in a strategic network is TRUST an important coordination mechanism.

### *2.3 Business Processes and Their Management*

A business process is a collection of related, structured activities or tasks that produce a specific service or product for a particular customer. It can be visualized with a flowchart as a sequence of activities with interleaving decision points or with a Process Matrix as a sequence of activities with relevance rules based on data in the process. A business process

begins with a process aim and ends with achievement this aim. Process-oriented organizations break down the barriers of structural departments and try to avoid so-called functional silos.

Rummler & Brache (1995) use a definition that clearly encompasses a focus on the organization's external customers, when stating that "(...) a business process is a series of steps designed to produce a product or service. Most processes "(...) are cross-functional, spanning the 'white space' between the boxes on the organization chart. Some processes result in a product or service that is received by an organization's external customer. We call these primary processes. Other processes produce products that are invisible to the external customer but essential to the effective management of the business. We call these support processes" (Rummler and Brache, 1995).

The above definition distinguishes two types of processes, primary processes (nowadays called as: operational processes) and support processes, depending on whether a process is directly involved in the creation of customer value, or concerned with the organization's internal activities. In this sense, Rummler and Brache's definition follows Porter's value chain model, which also builds on a division of primary and secondary activities. According to Rummler and Brache, a typical characteristic of a successful process-based organization is the absence of secondary activities in the primary value flow that is created in the customer oriented primary processes. The characteristic of processes as spanning the white space on the organization chart indicates that processes are embedded in some form of organizational structure. Also, a process can be cross-functional, i.e. it ranges over several business functions.

A business process can be decomposed into several sub-processes, which have their own attributes, but also contribute to achieving the goal of the super-process (Anderson, 2009]. The analysis of business processes typically includes the mapping of processes and sub-processes down to activity level. Business Processes are designed to add value for the customer and should not include unnecessary activities. The outcome of a well-designed business process is increased effectiveness and increased efficiency.

Business process management has been referred to as a "holistic management" approach to aligning an organization's business processes with the wants and needs of customers (Brocke and Rosemann 2010). BPM uses a systematic approach in an attempt to continuously improve business effectiveness and efficiency while striving for innovation, flexibility, and integration with technology. It can therefore be described as a "process optimization process." It is argued that BPM enables organizations to be more efficient, more effective and more capable of change than a functionally focused, traditional hierarchical management approach (Ryan, 2009). These processes can impact the cost and revenue generation of an organization. As a managerial approach, BPM sees processes as strategic assets of an organization that must be understood, managed, and improved to deliver value-added products and services to customers. For this BPM could be defined as "corporate management through processes". A second popular definition of BPM as "company performance management through processes"



is defined by A.-W. Scheer in his article "Advanced BPM Assessment" (Scheer, 2007).

### **3. Methodology**

#### *3.1 Purpose of this examination*

The aim of this paper is the development of a concept for the temporary linking and steering of offset-affected BPs within a VCN.

For fulfillment of the above stated aim, the following tasks arise:

1. Analyze what is a Value Chain Network and of which relevant parts it consists.
2. Analyze why there are problems by the temporary linking and steering of joint BPs.
3. Analyze which BPs mainly from the temporary linking and steering of the joint BPs are affected.
4. Analyze which requirements are companies of the deeper levels of the Value Chain have on a concept for the temporary linking and steering of offset-affected BPs within the VCN.
5. Development of an appropriate concept for the temporary linking and steering of offset-affected BPs within the VCN.

#### *3.2 Research Framework and Methodical Approach*

This examination was triggered through an overall research project on the impact of offset to the business processes of SMEs, which will be published end of 2014. During the necessary Pre-Study for this research project, first indications appear that by offset-affected companies in the lower stages of the value chain have problems with the necessary temporary linking and steering of joint business processes.

The Pre-Study was conducted in the time of January to February 2012 and included 7 visits at two key companies in the German defense industry. In both cases OEMs, which were selected to gather information regarding the problems of offset in general and on the specific problems which having their suppliers when they have accepted offset obligations. During these visits, a total of 10 expert-interviews were conducted. Interview partners were managers which were covering in total the know-how from 13 different business process areas. Through the informal character of these interviews, the companies and interview partners are not named in this examination.

Background: The whole research project is aimed to the core competencies of the companies. For this reason, the affected companies have been reluctant to pass vulnerable data and information to third parties. In particular, the defense industry which is per se already interested in protecting their data is not willing to provide any data or information from these company areas (key word: protection of know-how to avoid competitive disadvantages).

### 3.2.1 Validity of the Findings

Due to the low number of performed interviews with experts, the statements made have of course only a limited explanatory power. Nevertheless, the interviews have shown that the by offset-affected companies and therefore the employees which are responsible for their execution (internal/external) are seen very similar the problems in temporary linking and steering of joint business processes. Thus, the statements of the interviewees are not representative, but they give an insight into the fundamental attitude of companies which are affected by offset.

### 3.2.2 Methodical Approach

The examination has been undertaken in four phases.

Phase One is the analysis of the expert-interviews and of an literature review which based on problems in the offset-caused temporary linked and steered VCN.

Phase Two analyze which BPs are mainly affected by the temporary linking and steering of joint BPs.

Phase Three is the analysis of the expert-interviews and the literature review in relation to the requirements made by the companies in the deeper levels of the value chain on a concept for the temporary linking and steering of offset-affected BPs within the VCN.

Finally, Phase Four involved the development of an appropriately concept for the temporary linking and steering of offset-affected BPs within the VCN. This phase based on the findings of the three previous conducted phases.

## **4. Results and Discussion**

### *4.1 The Offset Value Chain Network*

As in the second chapter illustrated, a VCN is a hybrid form of organization in which legally independent companies from successive stages of the value chain are collaborating. In the case of a by offset caused VCN can this, due to its temporary existence, additionally classified as Project-VCN, which in turn requires a monocentric form of steering. This form of steering depend very much on transparency and trust within the to coordinate VCN and can essentially equate with the control tasks of a business process management. As a managerial approach, BPM sees processes as strategic assets of an organization that must be understood, managed, and improved to deliver value-added products and services to customers. In the case of those BPs which must be linked and steered it concerns about the so-called Operational Process. Involved in such a VCN are then the business processes of the previous supplier and the ones of the new offset-partner. That this is not working without problems is presented in the following section.

### *4.2 Problems in the Offset Value Chain Network*

It is particularly difficult to manage a Offset-VCN, because the companies unwilling to agree

on a uniform technical standard and a common Key Performance Indicator System, which would be necessary for a successful VCN management. The biggest challenge in the Offset-VCN is to keep track of the high complexity of the different tasks. In addition, many aims have to be met simultaneously, so that it not only leads to partial optimizations and get important details in the background.

Critical problems arise on the one hand at the interfaces in the form of loss of time, adjustment costs and quality problems, on the other hand, the coordination effort, which is caused by the necessary division of labor. The problem with the overall aim fulfillment is linked to the distinct roles of each company of the offset VCNs, which partially in conflict to each other and interfere each other. Avoided can this problem may already be by the choice of the offset-partners.

Furthermore, by the offset-related global expansion of production sites, the material flows and the organizational effort significantly increased. Often the necessary work processes can no longer be managed by a single management, but require a separate monitoring and steering. This is further complicated by the fact that companies often use different planning systems to support their processes. Such local IT-Solutions contribute to the complexity of offset-related VCN-Processes and -Systems.

From the perspective of the individual companies means the merging with other to a commonly VCN often a overstrained. Especially small businesses soon come up with such a project to their limits. That's why the corporate philosophy and culture of the possible offset partner should already be taken into account in the selection phase.

As already mentioned, a network-wide visibility for a successful VCN-Management is essential. During the development of such a transparency, a number of obstacles are also to overcome:

- First, here is the increasing complexity of products mentioned: this is reflected often in a very deep Bill of Material structure. This results for the LSI and Tier 1 Supplier in some data-processing problems, because often must be summarized the needed parts over several batches into production families and these data must be sent to the Tier 2 to n Supplier.
- Second, an often inadequate technology base of the offset-partner plays an important role: Beneficial for exact delivery times or flexible production plans would be the use of modern planning systems which help the offset-partners to simulate different scenarios. These scenarios providing then a continuous view of their resources and thus feasible plans. Unfortunately, this is in many companies not yet possible because the technology is still far behind.
- Third, lacking in many areas is still a standardization: A problem similar to the second point can be seen especially at the interfaces when the individual companies use different technologies and software for their data storage. The dangers lie in this case, for example,

in a possible loss of data, multiple existing of data or a lack of clarity which can lead to wrong decisions in the management.

#### *4.3 BPs which are temporarily Linked in the Offset-Affected VCN*

As briefly mentioned above, the operational processes (OP) are those processes which having the greatest impact through the fulfillment of offset-obligations due to the fact that these processes need to be linked and steered temporarily in Offset-VCN. The operational processes include all activities that serve the value of a company. They are normally the core competence of an organization. Typical operational processes are purchasing, manufacturing, advertising and marketing, and sales.

#### *4.4 Requirements for a Concept for the Linking and Steering of BP in the VCN*

The requirements of a concept for the temporary linking and steering of offset-affected BPs in the VCN may be summarized as follows:

- The often very complex product structure in the defence industry requires a steering optimal support systems instead of "stupid" prioritization algorithms.
- The often especially in the SMEs available workshop production places high demands on coordination.
- Flexibility requirements calls for real-time data and simple change options.
- The majority of enterprise size present in the VCN (namely SMEs) does not allow expensive systems.
- Control must be carried out monocentric by BPM-Methods.

Furthermore, the concept for the temporary linking and steering of offset-affected BPs in the VCN must support the processes at the operational, strategic and technical level.

Strategic level - At this level be used Business Processes to achieve strategic objectives. As well, Business Processes are used to verify the achievement of the aims. This can for example be measured directly in the corresponding business process with the help of strategic Key Performance Indicators (KPI).

Operational level - On the operating level of the VCNs the Business Processes are executed. For this are fulfilling the on the processes involved parties single tasks which are collectively tackle an overall tasks.

Technical level - Regarding the execution of Business Processes in operations of VCN are existing different approaches. These range from a simple hand-written draft of the business process network to the use of modern BPM-Systems which are supporting the modeling, execution and analysis of Business Processes through IT.

Due to the above displayed complex requirement profile can already recognized now that the concept which must be developed, should not also be too complex, so that there no

acceptance problems arise during the integration.

### 5. Conclusion

Based on the findings of the previous sections can be developed an appropriately concept for the temporary linking and steering of offset-affected BPs in the VCN. The concept consists of three parts and can support the necessary processes on operational, strategic and technical level (see Figure 3).

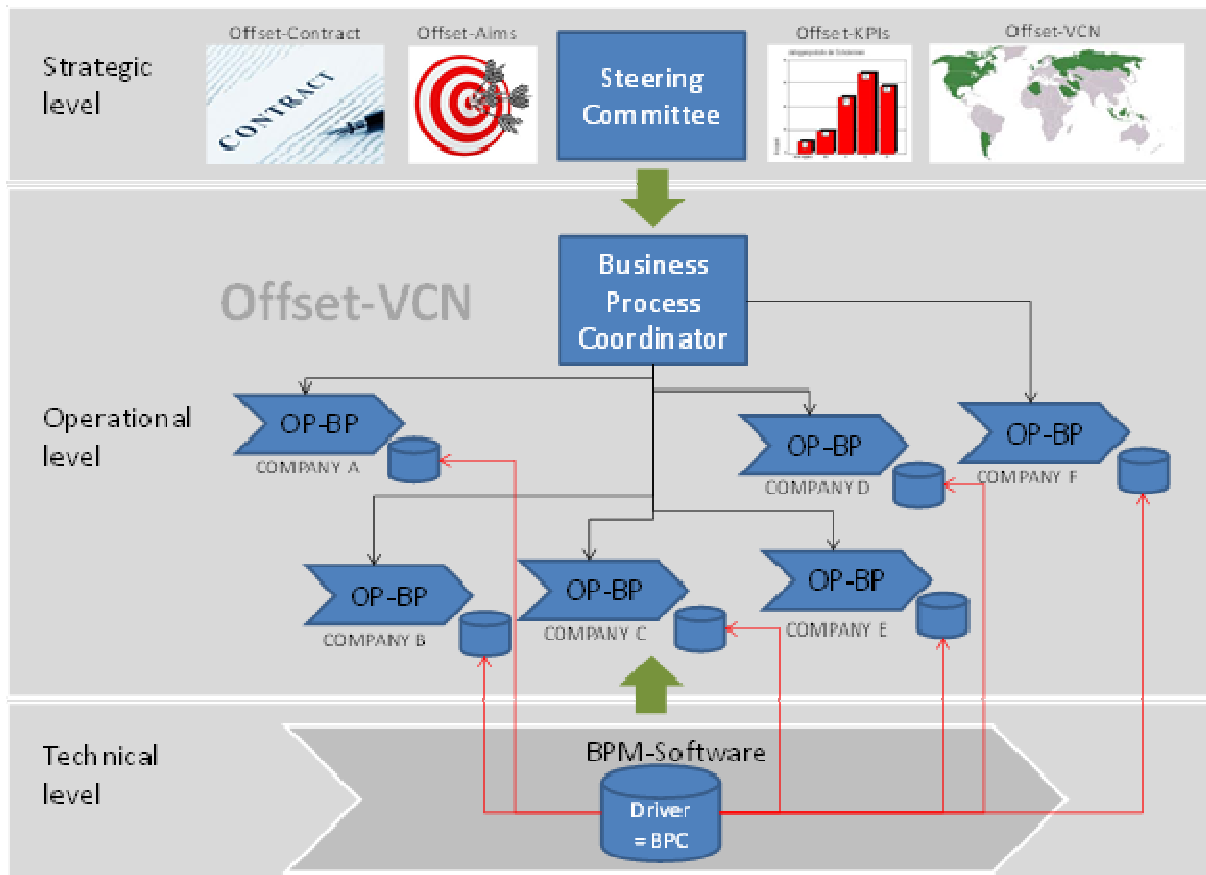


Figure 3. Three levels concept for linking and steering BPs within a Offset-VCN

Strategic Level - The item for indirect steering of the Offset-VCN is at this level the so-called Steering Committee. It is the supreme decision-making board of the by the offset-obligations formed VCN, which consists as possible of all those in the network involved representatives - but at least the business leaders. Before the work of the Committee starts is set up a constituent meeting for clarify the tasks, areas of responsibility and objectives of the Committee work. Two fundamental functions of the Committees are the monitoring the offset-project results and the identification of deviations from plan what needs to happen in the context of regularly steering committee meetings. Full attention must be spend for these two functions at the beginning of the Committee work – here must be performed a consensual deriving of objectives, milestones and KPIs from the present offset-contract. Furthermore, the formal decision-making powers (majority decision, consensus) must be clarified in advance.

Another essential aspect is the coordination or management of the Committee. In the case of an Offset-VCN it is indicated that a representative of the LSI takes over the function of the Committee leader/speaker. During the regularly performed meetings of the Steering Committee is present as the representative of the operating level the so-called Business Process Coordinator (BPC). Here he has the appropriate forum to provide the AS IS and To BE status of the activities of the Offset-VCN, if necessary to explain deviations and giving a forecast of the next actions in the VCN. Furthermore, he could request additional resources, etc. for the project.

Operational level – On this level will be conducted the Business Processes of the Offset-VCN. For this are fulfilling the on the processes involved parties single tasks which are collectively tackle an overall tasks. To ensure this, all participating member of the VCN are exchanging information about activities, achievement, etc. to each other. The coordination of all this information is one of the main duties of the Business Process Coordinator. His other duties are the network-wide design of processes and structures. As well must be determined, the manner in which the participating members are work together, and which member has to conduct which coordination tasks in coordination with the BPC. In the process design phase of the VCN, the offset partners need to plan a variety of processes to be executed.

Technical level - The activities of the BPC and the individual members of the network are supported on the technical level by an existing, usually IT-Infrastructure. This support can both data exchange (via email) and as well as the clarification of operating and process data from the ERP systems. Important in this context is only that a complete picture of the situation arises for the BPC and that essential information of the Offset-VCN will be shared. Cost-effective solutions for this can be for example a Intranet with SharePoint or software for Collaboration & Content Suites. Collaborative software or groupware is application software designed to help people involved in a common task achieve goals.

The target system of the concept:

- The various value chains are considered as a single unit.
- The supply of the LSI is strategic aim for all members of the Value Chain.
- All functions and systems of the value chain, are actively involved.
- The planning and management of value chains is done in compliance with the impact on all resources.
- Use of common KPIs.

Through the fact that there are at any developed concept are different views exists, the relevant pros and cons are to be shown at this point.

Pros:

- Monocentric Steering function within the Offset-VCN.



- Use of BPM methods.
- Small complexity of the concept.
- Providing of a common KPI-System for all Network-Member.
- Concept can be implemented by SMEs with less effort.

Cons:

- The leadership role of the LSI must be accepted by all Network-Members.
- The will to cooperate and keep transparent must be pronounced at all Network-Members.

All in all the developed concept provides starting point for an efficient and effective linking and steering of operational processes in an offset-affected VCN. Of course, the presented approach may be just one of many solutions. Furthermore, the applicability of the concept has yet to prove in practice, in a next step.

To summarize, one thing is not to forget in this context. A concept is one thing, the people how makes it functional in practice would be the other. The expert-interviews and the necessary review led to this concept, but from today's point of view further investigations are in particular in the context of the subjects Offset, VCNs and Process Management are required.

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### **Glossary**

BP: Business Process

BPC: Business Process Coordinator

BPM: Business Process Management

IT: Information Technology

KPI: Key Performance Indicator

LSI: Lead System Integrator

OEM: Original Equipment Manufacturer

OP: Operational Process

SME: Small and Medium Enterprise

VCN: Value Chain Network

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