

## VALUE CHAIN CREATION PROCESS FROM THE PERSPECTIVE OF VIRTUAL ENTERPRISE

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**Abstract:** *Virtual enterprise is understood as a temporary coalition of business entities, which may be mutual competitors at the same time and which are combined in order to take an advantage of certain business opportunity at the market. The main goal of paper is to identify and describe the basic steps, to define the conditions and discuss restrictions of each stages of effective value chain creation process.*

**Key words:** *Virtual enterprise, value chain, methodology, effectiveness*

### 1. INTRODUCTION

The paper focuses on the topic of value chain creation process for Virtual Enterprise. The introductory part of the paper defines the concept of "Virtual Enterprise" (Goranson, 1999) and motivates its application especially during the time when companies face decreasing demands and strives for the highest possible levels of cost savings operations. The following parts discuss the restrictions, limitations and conditions of successful cooperation.

### 2. CONCEPT OF VIRTUAL ENTERPRISE

Virtual Enterprise (VE) rises for the purpose of using the business opportunities that would no individual subject be able to use separately (Thompson, 2008). This is possible through efficient cooperation and integration of assets like knowledge, ability and core competencies owned by single members of Virtual Enterprise (Hongmel et al., 2003).

By identification of new business opportunity "mother company" will take a role of initiator of rising VE (Januska, Chodur, 2009). The mother company as an initiator has to choose and contact suitable firms or suppliers to complete main production process. The main process in this stage is understanding to the production of consumer's requisite product, or service and it's on time delivery. Customer's request is only satisfaction of his needs and requirements. In which way will these needs and requirements be satisfied, or how the main process will be executed, isn't important for consumer. This is fully in hands and responsibility of mother company as an initiator and leader of VE. Main task of initiator of VE is selection of suitable partners and creation of process models of VE and their exact requirements.

### 3. METHODOLOGY FOR VALUE CHAIN CREATION OF VIRTUAL ENTERPRISE

Defining the methodology of value chain creation process for VE begins with a role of VE (Virtual Enterprise) as an initiator, i.e. an entity that initiates the creation of a virtual enterprise and is responsible for all activities associated with the emergence of VE, such as defining the contracts obtained and diagnosis of any information on the contract as well as the selection of criteria under which will the initiator choose partners for VE or will be responsible for the evaluation and

selection of emerging VE's subunits (Chodur, 2009). In the following sub-chapters is the reader provided with the following steps (methodology) of value chain creation process. Conditions for methodology implementation and related restrictions will be specified.

#### 3.1 Characteristics of obtained contract according to the Customer's Requirements

The first step is to correctly identify the contract obtained, i.e. we need to know the characteristics and all parameters available (information) concerning the contract according to the specific customer requirements. An important condition is an effective communication with customers, who should be able to provide all the necessary information. The basic parameters required by the contract should be as follows:

- The required volume of the contract;
- The time requirement for completion of the contract;
- Identification of production requirements within each stage of production;
- Material and raw material requirements of production;
- Technological requirements of production, etc.

For successful and full completion of this phase, we can define the following conditions:

- Identification of all contract parameters for VE (character, size, volume, delivery date, etc.);
  - Carry out the collection of any information related to contract and then according to the needs update the following documents during the creation of VE and
  - Use the documentation generated during the contract for evaluation (selection) of potential partners of VE (VE's value chain creation process).
- During this phase might appear a certain related restrictions:
- Incomplete information on contract;
  - Poor or inadequate communication with the customer;
  - Inability to obtain complete information about contract;
  - Distorted parameters of the contract.

#### 3.2 Clarification of the characteristics of the VE's value chain creation processes

Another important step after defining the basic parameters of contract is to specify the characteristics (orientation) of each stage of the contract "life". The aim is to specify the type of contract - manufacturing, services, product innovation, seeking for new markets etc.

Defined conditions concerning above mentioned stage of VE's value chain creation are following:

- Complex information about obtained contract is needed (the nature of the product, technological complexity, etc.) according to the customer;
- Gained information about contract must be clear and it must be possible to set up all necessary parameters needed to define (determine) all the major processes;
- It seems to be appropriate to use the complete list of recommended value chain processes, e.g., these processes describe us all activities that may occur within the value chain;

- The main goal of this phase is to clarify the character of contract, i.e. whether it will affect only the manufacturing processes or whether it will be part of the so-called non-productive value chain processes (innovation activities, product development, market acquisition for innovative products etc.).

For non-production processes of value chain is very difficult to find appropriate and efficiency metrics, which are needed for the evaluation and within the selection processes of potential (future) VE's partners.

### 3.3 Defining the basic stages of contracts – general processes

The aim is to design all the value creation processes of contract. The result should be the process map of all major processes that are necessary for successful completion of contract. For this purpose we can use the general scheme of procedural map of virtual company, which can be found as the output of the project No. GA ČR. 402/08/H051 (Chodur, 2009).

Defining the potential limitations:

- Incomplete or distorted contract information, which can make it difficult to define the necessary value chain processes;
- It is very difficult to define processes that can occur repeatedly in different stages.

### 3.4 Defining the degree of breakdown of VE's value chain processes map

At this stage is needed to clarify how deeply we decompose all defined processes which will be then inquired from VE. Too large layout and detailed decomposition into more value chain sub-processes may hinder the ability to provide quality information (variables) for the efficiency metrics according to which the VE's partners are chosen.

Defining the conditions for successful implementation of this phase of development value chain:

- core condition, or rather the assumption is very well analysed and prepared process map of value chain;
- process map must already contain all the processes based on the conditions and nature of the contract obtained

Defining the potential limitations:

- during the decomposition of value chain to the sub-processes is necessary to take into account that we have to be able to identify all the information needed for all these processes to create indexes and subsequent evaluation and selection of convenient partners of VF;
- too large layout and detailed decomposition into more value chain sub-processes may hinder the ability to provide information (variables) for calculating the efficiency metrics according to which we choose partners for VF.

### 3.5 The final definition of a Virtual Enterprise's value chain processes

This step is clarification of all processes that leads to the successful fulfilment of a contract. The aim should be to define all the processes that will be inquired from VE. Value-chain and its process of creation should meet two basic conditions:

- Logical continuity and
- Time continuity.

### 3.6 Defining the control processes of VE's value chain

In the case of virtual enterprise consisting of selected entities (firms) will be considered as the most important control processes following:

- Operative management (concerns the planning processes);
- Information system management of VF, i.e. the management of information between the initiator and the other VF's partners;
- Human resources management;
- Knowledge management, in the case of production-oriented virtual firm it is mainly management of technologies;

- Management and administration of assets (infrastructure), such as maintenance;
- Management of financial transactions related to the contract and its performance;
- Relationships management between partners of VE (legal, economic, ownership, etc.).

### 3.7 Defining the efficiency metrics for all VE's processes

To ensure that each of the defined process will create maximum value added, it is needed to define metrics (criteria) of efficiency for each process. We will look for the processes that add maximum value. Created set of defined effectiveness metrics for the selection and evaluation of VE's processes can be found as one of the outputs of the project No. GA ČR. 402/08/H051 (Chodur, 2009).

### 3.8 Evaluation and selection of VE's partners

The last and final phase is the evaluation and selection of VE's partners. To detect the basic facts of this phase we have defined the basic conditions and possible limitations:

- Any inquired process for VE must have clear metrics;
- VE's potential partners must have easy access to the input parameters for calculating the required efficiency metrics;
- Each potential VE's partner must meet production or non-production requirements (capacity, technology, factors, etc.) that were defined in the previous steps.

Restrictions:

- Input parameters for efficiency metrics could be for some VE's partners poorly or not at all detectable (the company has no such information available);
- Access and availability of certain parameters, requirements or information for each potential partner may be very difficult or unavailable;

## 4. CONCLUSIONS

We discussed the issue of cooperation of virtual enterprise's partners in order to reach the existing business opportunities that are impossible to be gained if the partners act individually. We think that the concept of a virtual enterprise can become an effective "tool" through which enterprises can cooperate and increase their total competitiveness. In the paper we identified and described the basic steps, conditions and discuss restrictions of each stage of value chain creation process.

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