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► **To cite this version:**

Victoria Klyukina. Detecting Value Capture Processes Using Fractal Enterprise Model (FEM). 14th IFIP Working Conference on The Practice of Enterprise Modeling (PoEM), Nov 2021, Riga, Latvia. pp.80-89, 10.1007/978-3-030-91279-6_6 . hal-04323848

HAL Id: hal-04323848

<https://inria.hal.science/hal-04323848v1>

Submitted on 5 Dec 2023

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Detecting value capture processes using Fractal Enterprise Model (FEM)

Victoria Klyukina¹[PhD student]

¹ Stockholm University, DSV, Sweden
victoria.klyukina@dsv.su.se

Abstract. Value creation and value capture are the two main concepts within strategic management. This because of firm's revenue depends on how these processes are managed. Value creation are associated with value chain processes that generate costs in a balance sheet. Thus, these are mostly tangible. Whereas, the value capture processes are associated with the processes intended to create any type of competitive advantage. Such advantage might be hidden in firm-specific routines or resources. Thus, value capture processes are ambiguous and often intangible. Practically, it is a challenging task to identify and manage them. This paper discusses how Enterprise Modelling (EM) may assist in detecting of this type of processes, particularly, Fractal Enterprise Model (FEM) is used for the challenge. A hypothetical example for detecting value capture processes is given using FEM technique.

Keywords: value capture processes, FEM, enterprise modelling, firm-specific assets and resources, strategic management.

1 Introduction

Value creation and value capture are the two main concepts within strategic management. Value creation refers to the processes representing the core competence of the firm. These processes exist to produce and deliver products/services to the customers or society. Thus, this type of processes belongs to a value chain processes that are associated with the costs. Whereas, value capture processes are those that are designed for strategy implementation and building of a competitive advantage. Such advantage might be realised through a control over scarce tangible and intangible resources. The resources that might be evaluated as being Valuable, Rare, Inimitable and Specific (VRIS) [1] might be classified as unique. Through effective application of such resources the firm may achieve the distinctiveness that represents a competitive advantage [2]. Although, unlike the value creation elements that are mostly tangible, the value capture elements are firm-specific and are rooted in mostly intangible elements, e.g. organisational competences, managerial know-how, learning, sensing, etc. Hence, in practice such elements are hidden in firm's routines or resources. The firm-specific routines and resources are acquired through a configuration of assets available to a firm and the processes managing these assets. Thus, the value capture processes might be

identified through interconnections of business elements, i.e. a chain leading to the sources (roots) for building the strategically important and firm-specific assets. However, due to the ambiguity and intangible nature of the elements it is a challenging task. This paper discusses the ways enterprise modelling may assist in detecting value capture processes. Particularly, Fractal Enterprise Model (FEM) is applied in the trial. FEM is based on the interconnections between processes and assets and, therefore, is considered being promising in addressing such challenge.

2 Methodology

The presented paper is a part of a broad research belonging to the Design Science (DS) paradigm [3]. This overarching research is related to the Fractal Enterprise Model (FEM) development. DS is concerned with finding a solution [4] or artefact [3] to joint Problem space and Solution space in terminology of [5], [6] (see Fig.1). The presented research is placed in Evaluation space depicted in the Figure 1 in iteration between Problem and Solution spaces.

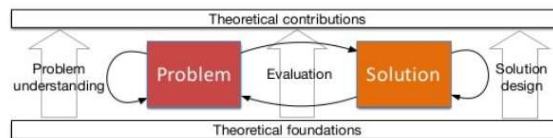


Fig 1: Design Science Framework [7].

The motivation for this study comes from the results and analyses of the preceded case studies. In particular, the background of the empirical research where FEM was applied in operational decision making [8] spawned the idea of FEM potential usefulness in detecting value capture processes. During the work on this case the issue of a holistic approach become apparent when producing practical recommendations for efficiency improvement in operations. Particularly, the work encountered into the need to understand the nature and the role of the processes when dealing with the issue of cost reduction or increase of the revenue. Thus, our research group has realised the importance of managing not only value creating processes but also value capture processes in such task. But the identification of the value capture processes is not a straight forward task in practice. Hence, the research has fallen into the ‘problem space’ again (Fig. 1). Thence, the presented paper is the first attempt to discover whether FEM can be useful in addressing this challenge to some extent.

However, due to the limitations of time and space the hypothetical example used in the presented paper is taken from the another study of Bider and Perjons [9]. The matter of modelling for value-based organizational design has been already tackled by the authors. Hence, the presented illustration extends the authors’ previous idea.

3 Short overview of FEM

The development of Fractal Enterprise Model (FEM) was inspired by a fractal view on the organisation proposed by [18]. The approach is distinctive by its inherited emphases on the recurring patterns at the progressively smaller scale when constructing an artefact of organisational instances. Fractal view on the organisation also tackles the concause and multiple effects phenomenon providing guidance for decision making.

FEM consists of three types of the elements in building archetypes, so-called fractals: business processes, assets, and relationships between them. Graphically, a process is represented by an oval, asset by a rectangle and the relationships between them by the arrows (see Fig. 2). The names of the processes are labelled inside the oval, and the name of the assets are labelled inside the rectangles respectively. A solid arrow pointing from the asset to the process represents a relationship of a process using an asset. This pattern constructs a process-asset archetype (fractal). A dashed arrow pointing from an asset to the process represents a relationship of a process changing the asset. This pattern constructs an asset-process archetype (fractal). The arrows are also labelled showing the type of relationships between processes and assets. In process-asset archetype the relationships identify the role an asset plays in the process, e.g. workforce, equipment, etc. In the asset-process archetype the relationships identify the way a process affects the volume and the characteristics of an asset, e.g. acquire, maintain, retire. Also, different styles for borders of rectangles and ovals such as dashed and solid, as well as different colours and thickness might be used to group different types of processes and assets. These two archetypes allow building of a directed graph in recurring manner to represent organizational instances.

4 Use of FEM for value-based organisational design (hypothetical example borrowed from [9])

In the previous study [9] FEM was used for a firm design taking value-based organisational perspective. The hypothetical example was given in a hypothetical consultant company. The prime value creating process was defined as “Providing solutions for customers” (see in Fig. 2). Three main strategic choices in a way the value might be delivered to the customer were also determined. These choices were: developing firm’s competence in management consultants, competence in procedures or competence in IT support/tools. It has been noted that the firm need all of these three assets for value creation but for successful strategy implementation the focus should be only on developing a competence that will define a firm’s unambiguous distinctiveness. Below is presented a fragment of the original model from [9] where these three assets are represented by blue rectangles with relationships “Workforce,” “EXT”, “Tech & Info Infrastructure”.

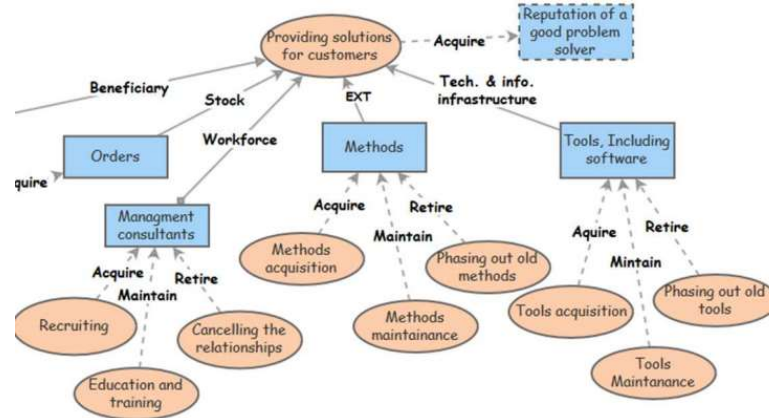


Fig. 2. A fragment of FEM representing JYAMCC [9].

Building up on this model and to detect value capture processes using FEM, there is a need to understand the representation of value creation and value capture within fractal modelling. In presented hypothetical example the main process “Providing solution for customers” represents the prime process according to value chain concept [10]. It is also a part of a business model (BM) design describing *what*, thus is a value creating process. While to depict value capture processes, one need to look beyond BM design. It is necessary to analyse the ways of value creation in such a manner that allows the firm to retain a share of value it creates. Managerial processes are used for this purpose. However, the choice of strategies for value creation and its successful implementation is determined by the external factors and the assets available to a firm [2]. Since the resources are scarce, the configuration and management of available assets in a way that makes them firm-specific play a significant role in success. It follows, managerial processes are the once to look after in search for the value capture. In FEM the processes that manage an asset might be associated with the managerial processes. These are noted with relationships *Acquire*, *Maintain*, *Retire* in the Fig. 2. Hence, these are the processes that need to be evaluated and analysed when modelling for value capture.

5 Use of FEM for detecting value capture processes (build on hypothetical example)

To enable value capture modelling with FEM in the example above, it is important to consider external environment. Particularly, to identify the key success factors in the industry that drive profit and is a base for competitive advantage. Then, the internal chain of interconnected elements leading to addressing the key success factors might be identified. This chain is constructed with recurring asset-process and process-asset archetypes including routinised processes (known as competences [11]), and firm-specific assets and processes whose services are difficult to buy or imitate (known as resources [11]–[14]). This type of assets may not be directly used in value creating process but is critical to linkage between processes that create value and capture it (building of competitive advantage).

Hence, the modelling for detecting of value capture processes starts with identification of the key success factors and the assets needed to deliver on these factors. The identification of the firm's key success factors might be done by either industry analysis, firm's external environment or from the interviews with the management.

From the presented example of JYACCM consultant company, providing high quality, creative solution can be identified as one of the key success factors in customer satisfaction; presuming that customer satisfaction is one of the most important measurements of success in a consulting business. In other words, by delivering a superior service the firm may build a competitive advantage on the basis of retaining customers and enjoy the superior price that customers are willing to pay for such service.

The models below are modified versions of the model presented in Section 4 (see Fig. 2). They are enhanced with the hypothetical examples of value capture elements considering the key success factor in the main process of value creation, i.e. "Providing high quality, creating solutions". Rectangles "Management consultants", "Methods" and "Tools, Including software" represent some of the assets needed in the main process (see Fig. 2). Investing and developing any of these assets reflects the strategic choice and different approach to value capture. For example, by choosing focus strategy on development of Workforce, the firm may pursue cost leadership strategy in relation to Methods and Tools. Meaning that by capturing value through development of Workforce the firm may need to abandon competence/capability development in Methods and Tools; perhaps, to outsource these functions or enter the alliance. Hence, in each case the main value capture processes may vary.

The following models illustrate three versions of organisational focus in respect to the chosen strategy. The main process of desired value creation is represented by the pink oval with the red-coloured boarder in the models. The value capture mechanisms are identified through the firm-specific assets and the processes managing such assets; these are marked with the blue borders. The connectivity chain of value capture mechanisms is highlighted through the colouring of the elements, whereas the hidden processes, i.e. the sources of such mechanisms are shown in dark-red. Note, that the ideas presented in this paper is a first attempt in addressing the challenge of modelling for value capture processes using FEM, particularly, use of intangible elements. Therefore, the results are yet the subject for discussion.

Expert-oriented value creation

The first example refers to the firm's strategic choice of focusing on the Workforce while creating value for the customers. Fig. 3 depicts the value capture mechanism in this case. The process "Providing high quality, creative solutions" on the top in pink with red boarder represents a firm's core capability that addresses the key success factor. If the firm chooses to deliver value through a high quality and creative solutions it may focus on HR skills and capabilities. In the graph it corresponds to managing "Top experts management consultants" asset in light-blue colour. Thus, processes that manage this asset (represented by pink ovals with connections *Acquire, Maintain, Retire*) are critical to deliver on the key success factor. However, these processes are routinised whereas the routine is characterised by the configuration of assets used in it; hence they are not value capture but may be capability building. If the asset used in such processes

is firm-specific, it creates a firm-specific routine (key competence); the basis for capability building according to resource-based perspective [11]. In the dark-blue colour is shown the firm-specific asset “HR and career path policies”. This asset is used in the routinised processes *Recruiting*, *Education and training*, *Cancelling the relationships* (management of “Management consultants” asset) and represent the strategically important assets that the competitive advantage might be built on. In building this type of competence the resources such as time and investments are needed. That is why this type of assets are difficult to imitate or buy. Hence, they become distinctive and specific to a firm. Hence, “HR and career management” (in red) is one of the managerial processes that builds and maintains these firm’s specific assets (in dark-blue). Thus, this process is defined as one of the value capture processes. Note that the “Top experts management consultants” asset is not indicated as a firm’s specific in this case. This matter will be discussed in the Section 6 ‘Discussion’.

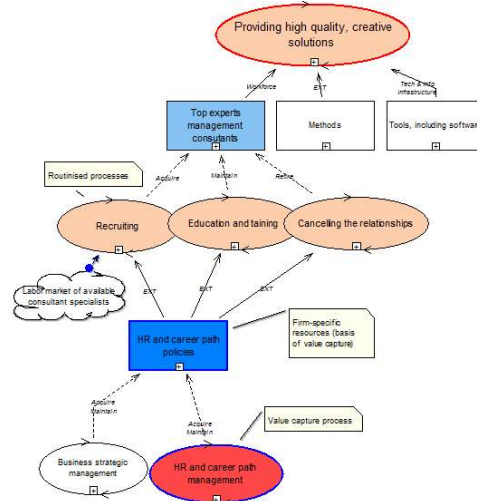


Fig 3: Value capture mechanisms in FEM. Red border - value creation, blue border - value capture, coloured elements – chain mechanism (enhancement of Fig. 2).

Method-oriented value

The second example refers to the firm’s strategic choice of focusing on the Methods while creating value for the customers (see initial Fig.2). Fig. 4 below depicts the value capture mechanism in this case.

Fig. 4 depicts value creating process represented by the pink oval with red border “Providing high quality, creative solutions”. If the firm chooses to focus on the Methods in value creation it has to be very innovative in developing methods that can be considered as firm-specific to capture some of the value it creates. This type of methods might be classified as Know-how, represented by dark-blue-border rectangle in Fig. 4. Know-how helps the firm to create value for the customers in a way that none of the competitors does. Thus, know-how method is a firm’s specific asset. But for development of unique methods having simply human resources for the task does not guarantee the creation of know-how. Humans need to be motivated and encouraged in a way that

enables them to think creatively and openly to deliver on such task. Thus, management of this asset must be supported by innovative environment, e.g. “Cross-functional team projects” (dark-blue rectangle Fig.4)) might be a firm-specific organisational design promoting creative culture. Hence, the process of “Coordination of HR strategies and Business strategies” to achieve a success is the value capture process (in red oval). It supports both firm’s unique resources, “Cross-functional team projects” directly and “Know-how methods” indirectly (in dark-blue rectangles Fig.4).

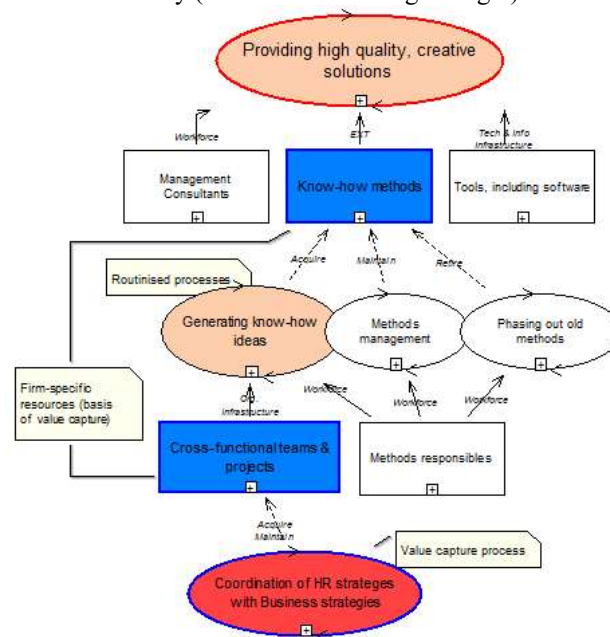


Fig 4: Value capture mechanisms in FEM. Red boarder - value creation, blue boarder - value capture, coloured elements – chain mechanism (enhancement of Fig. 2).

Tools-oriented value

The third example refers to the firm’s strategic choice of focusing on the asset “Tools, Including software” while creating value for the customers (see initial Fig. 2). Fig. 5 below depicts the value capture mechanism in this case.

Even in this case, Fig. 5 depicts the same value creating process “Providing high quality, creative solutions” in the pink oval on the top. If the firm chooses to focus on the asset “Tools, Including infrastructure”, it has to develop tools that can be considered as unique and firm-specific. Such tool might be represented by the database of cases that can provide consultants with the instant access to the information necessary to create high quality, rapid solutions to the customers. Such information might be represented by previous experience of different consultants, description of the case, the solutions found in each instance, etc. However, to create such unique tool, the consultants must have incentives that encourage them to share personal, tacit knowledge acquired in the field. Hence, the process “Management of incentives & reward for knowledge share and cooperation” is a value capture process that manages database maintenance.

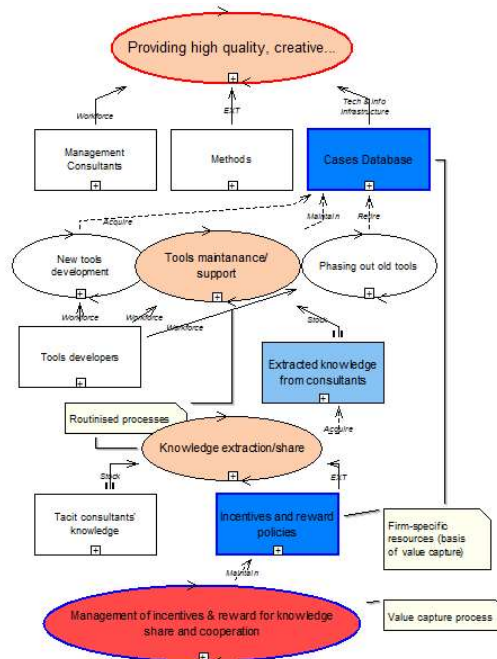


Fig 5: Value capture mechanisms in FEM. . Red border - value creation, blue border - value capture, coloured elements – chain mechanism (enhancement of Fig. 2).

6 Discussion

As mentioned in Introduction (see Section 1) value capture processes are the processes that manage building of competitive advantages on the basis of firm-specific assets and capabilities. The experience showed that such processes might be hidden in the process-asset archetype. This archetype assigns processes directly managing an asset with notation *Acquire*, *Maintain*, *Retire*. However, the linkage between value capture processes and specific asset are complex and may not be direct. The assets whose services is difficult to buy or imitate are developed in a chain of interconnected elements that may be hidden within the system. Note that modelling with FEM emphasising indirect interconnectivities to represent complex intangible elements is not a task FEM was developed for. Using FEM in such way might be seeing as finding the limits of FEM possibilities or opportunities for its development. Therefore, the results of this study are highly subjective.

In the presented hypothetical examples of FEM models the unique assets have been identified using VRIS model. But it has to be noted that this process is the matter of subjectivity and may influence the outcomes. Therefore, below follows the explanation of VRIS logic applied in the hypothetical examples.

Different HRM policies and strategies have been considered as firm-specific assets (see Fig.3, Fig4 and Fig.5) because of they are managerial know-how and is a part of the system that has no value when dispatched from the organisation. They are difficult

to imitate due to ambiguity and, therefore, are highly specific to the firm. Besides, it is rare because of it takes time to develop and involves innovation and creativity. Thus, this asset is critical to building an internal expertise and attract the best specialists when focusing on Workforce. Note that the asset “Top experts management consultants” itself is not marked as firm-specific (see Fig. 3). This because of human resources rarely may be classified as firm-specific since the organisation does not own people or their knowledge. Human resources are not valuable, rare or inimitable to the firm but rather to the person itself; the person may leave the organisation taking all knowledge and experience away from the firm (probably to competitor). Hence, it is the processes of anchoring the resource that enables more value creation within the organisation than it could do outside makes the resource valuable to the firm. It is the identification of this type of processes that the modelling is concerned in the presented paper. In contrast, “Recruiting”, “Education and training” and “Cancelling the relationship” processes maybe highly unambiguous and, therefore, neither may be identified as unique unless they are based on firm-specific assets. For example, to achieve the strategic objectives it is not enough simply to hire skilled people. The firm must provide motivation, desired behaviour, right attitudes, and certain cultural values. There might be many ways of managing these variables, whereas some will be more successful than the others. Thus, the HR processes presented in the examples (see Fig.3, Fig.4 and Fig.5) are the managerial know-how and unique to the firm. Therefore, these processes represent the sources of value capture processes on which the competitive advantage might be maintained.

6.1 Lessons learned

The experience of modelling with FEM for detecting value capture processes showed that:

- it is useful to define the main process in terms of capability to guide the modelling, e.g. “Providing solutions for customer” (see Fig. 2) vs “Providing high quality, creative solutions” (see Fig. 3, 4, 5);
- the result implies on that the asset-process archetype in FEM may contains value capture processes if the asset is firm-specific;
- a value capture processes may not directly manage a firm-specific asset. It is important to distinct between routinised processes that directly affect value creation and the processes without which firm-specific assets will be lost;
- the identification of the firm-specific assets is a subjective matter where other techniques should be used for resource appraisal, e.g. VRIS model.

7 Conclusion, implications and limitations

The trial of extending FEM application for detecting value capture processes has resulted in promising outcomes, however, the results are the matter for discussion. The value capture processes in FEM might be part of an asset-process archetype. If the asset that a process manages is firm-specific, i.e. corresponds to VRIS characteristics, then

the process manages this asset might be a value capture process or a part of a value capture chain mechanism. The latter means that the value capture process may not manage a specific asset directly, rather through a complex coordination of interconnected elements leading to the process representing the root/source of value capture mechanism.

This study is limited to a hypothetical example to illustrate how FEM might be used for detecting of value capture processes. Hence, to strengthen the implications, there is a need to test this approach empirically, in the real case examples.

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