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HUMAN RESOURCE MANAGEMENT AND INNOVATION STRATEGY FORMULATION AND IMPLEMENTATION

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Introduction

The ability of firms to innovate has been established as an axiom for firm performance within organizational studies. The main reason is that companies need to develop and introduce new products and new technologies in order to be able to diversify, adapt and reinvent themselves, which allow them to sustain their competitiveness. An essential feature of corporate strategy is therefore an innovation strategy. Briefly, an innovation strategy should help a firm to decide, in a cumulative and sustainable manner, how to fit its innovation activities to its corporate objectives.

This paper targets the potential of Strategic Human Resource Management (SHRM) to support the formulation and implementation of innovation strategies in companies. In the study, we presume that HRM is connected to the strategic process of firms mainly as a decision support system in the formulation of an innovation strategy, and as an operative support system in the subsequent strategy implementation.

Generally, strategy is defined as the basic goals and objectives of the organization, the major programs of action chosen to reach these goals and objectives, and the major pattern of resource allocation used to relate the organization to its environment.

The paper will explore the issue of SHRM involvement in strategy formulation and implementation from two perspectives. First, we will investigate how R&D executives and professionals conceive of this issue. Second, we will also investigate if there are differences between how HRM should be included in strategy formulation and implementation when working with corporate strategy and business unit strategy (competitive strategy), respectively.

Research questions

- What HRM issues **are relevant** to innovation strategy formulation and implementation respectively?

In the following parts we will elaborate the concepts of SHRM and strategy. Thereafter, we will discuss how SHRM is understood as important for strategy formulation as well as strategy implementation, and in that way SHRM contributes to innovation performance. After that

we argue that innovative capability is a relevant framework, and elaborate its ingredient concepts; motivation, cognitive skills and behavioural skills. The paper is concluded with a presentation of conclusions, managerial implications and suggestions for future research.

Outlining the concept of Strategic Human Resource Management (SHRM)

Human resources, and the management of such resources, have been studied during a long period of time. The theoretical backgrounds of research in the field are several, and just a few of them are mentioned here.

The “human capital”, and efforts to measure and quantify the human capital, has been the issue of intensive research. Human capital is the stock of competencies, knowledge and personality attributes embodied in the ability to perform labor so as to produce economic value (Crook et al., 2011).

Human capital was discussed early in economics and became an important concept within the “Chicago School”. According to this school, human capital was mainly to be treated as any other capital (such as machines), and a firm could invest in human capital (for example by education and training) and calculate a return of investment on this investment (Becker, 1993 (first publ. 1964)). The view that human capital should be treated as any other type of capital has been challenged, because humans create value to an organization through other assets, and not only as a capital asset in its own. Humans, seen as an asset, are therefore intertwined with other both tangible and intangible assets of the firm (Creelman, 2004).

The concept of HRM has traditionally focused the processes of planning, recruitment, selection, orientation, training, performance management, compensation and benefits, career development (Robbins & Coulter 2002). When strategic management later became an important issue, a strategic perspective was also applied to the field of HRM, and the concept of Strategic Human Resources Management (SHRM) was introduced in the late 1970th and elaborated upon during the eighties (Galbraith, 1979; Fombrum, 1984; Lengnick-Hall & Lengnick-Hall, 1988). As pointed out by Lengnick-Hall & Lengnick-Hall in their literature review (1988), the concept relies on the assumption that business success is an effect of how the interdependence between competitive (business) strategy and HR strategy is managed. Also several other studies indicate a positive relation between SHRM and overall firm performance (e.g. Becker and Gerhart, 1996; Delaney and Huselid, 1996).

When it comes to the conceptual difference between HRM and SHRM, it is not always easy to distinguish between the two. One important difference, however, is that the former is mostly concerned with individuals, while SHRM focuses the level of organizations and on managerial systems as solutions to business problems (Becker & Huselid 2006). In this study we connect HRM to the strategic process of firms, mainly as an input/decision support system in the formation of overall business strategy and sub-strategies (such as innovation strategy), and as an operative support system in the subsequent strategy implementation. This will be further elaborated in later parts of this text.

Business strategy, innovation strategy and firm performance

A basic assumption of this study is that (S)HRM is important to firm performance as it affects both how strategy is formulated and then implemented (Becker and Huselid, 2006). General-

ly, strategy is defined as the basic goals and objectives of the organization, the major programs of action chosen to reach these goals and objectives, and the major pattern of resource allocation used to relate the organization to its environment (Bracker, 1980). Business strategy has received considerable attention by scholars of organizations mainly because it has been found to be an important predictor of business performance (e.g. Olson et al., 2005).

The concept of strategy is complex. On an overall level, large organizations (such as diversified companies) have two different levels of strategy: (1) corporate strategy (also called companywide strategy), and (2) business unit strategy (also called competitive strategy) (Porter, 1987). These general strategies that guide the operations of the whole organization (corporate wise and business unit wise) are supplemented with strategies of a third kind, namely strategies within the various functions (e.g. manufacturing, marketing, finance, R&D, and personnel) of the organization (Dyer, 1983).

In this study we focus on innovation strategy to limit our scope. Such a focus is appropriate as the aim of this study is to add knowledge about how SHRM can be used to sustain and develop innovativeness among employees, teams and departments, thereby improving results in the form of innovation and business performance. As innovation strategy is central to innovation performance (Dogson, Gann, and Salter, 2008), it is assumed that its formulation and implementation is central to sustained innovativeness.

The literature on technology and innovation management also emphasizes the importance of innovation strategy. According to Tidd and Bessant (2009), an essential feature of corporate strategy should be an innovation strategy. An innovation strategy should help firms decide, in a cumulative and sustainable manner, about how to fit their innovation activities to corporate objectives (Dogson, Gann, and Salter, 2008, p. 94).

The aim of R&D is to combine technological and market opportunities to produce differentiated goods and information that convey competitive advantages (Dogson, Gann, and Salter, 2008, p. 197). The benefits of innovation strategy to firms are improved performance in the ways they create and deliver value and enhance their competitive advantage (Dogson, Gann, and Salter, 2008, p. 122).

According to Dogson, Gann, and Salter (2008, p. 96), an innovation strategy has four interrelated elements: i) *the enacted strategy* itself, including its targets and “fit” with the business strategy of the company, existing innovation efforts, and the context in which it functions, ii) *the resources* available for innovation (the assets a firm controls), iii) *the innovative capabilities* that guide and enable those resources to be assessed, configured/reconfigured, iv) *the innovation process* deployed to deliver results. An innovation strategy should therefore guide decisions on how resources are to be used to meet a firm’s objectives for innovation (and thereby deliver value and build competitive advantage).

R&D is mainly about producing and realizing ideas about products or processes. This is first and foremost a knowledge-based activity, which makes the availability and utilization of knowledge the main predictor of the quality and viability of the ideas that are eventually conceived (Pasmore, 1997). A central resource for firms in the realization of innovation strategy is therefore its human capital. Hence, in order for a firm to proficiently formulate and subsequently implement their innovation strategy, they need to consider and assure the

access to the human capital necessary to realize the strategy. In so doing, firms should make use of their HRM function in a strategic manner.

To this background, we assume that SHRM will be of importance to both how strategy is *formulated* and to its *implementation*.

Innovation strategy formulation and implementation, and the importance of SHRM

Strategy formulation is generally conceptualized as having to do with identifying a firm's strengths and weaknesses, and dealing with its external opportunities and threats (Porter, 1987). It includes activities such as formulation, evaluation and choice of strategy, which in turn could involve activities as performing a situation analysis, self-evaluation and competitor analysis.

From an innovation strategy perspective, as briefly noted above, HRM-issues are of great importance in strategy formulation. In order for a firm to formulate a strategy that is aligned with the resources of the organization and its competitive context, the HRM function possesses critical knowledge. When formulating an innovation strategy, internal strengths and weaknesses are critical elements. From this follows that strategy formulation necessitates a good understanding of the status of human resources within the company both on corporate and business unit level, and access to external sources of human resources. For example, when evaluating the applicability of a developed strategy it is important to consider the capabilities (skills and motivation) represented among company employees, and assess if they enables the strategy to be implemented. Such knowledge should be provided by the HRM function of the firm. Without a good understanding of such issues, the firm risks to develop a strategy that is unfit with the human resources who will, in turn, undermine the strength of the strategy.

The HRM function should therefore be included in the strategy formulation process to ensure that a good understanding of the present and future status of the human resources underpins the formulation process. As such HRM has a supporting function in the strategy formulation process.

When it comes to strategy implementation, the HRM function also possesses important knowledge and skills. In order for a proficient implementation, firms might need to increase the level of competence within the company by means of carrying out training programs with present personnel. Recruiting new personnel might also be necessary to succeed in strategy implementation. Both these examples would include active participation of the HRM function of the firm.

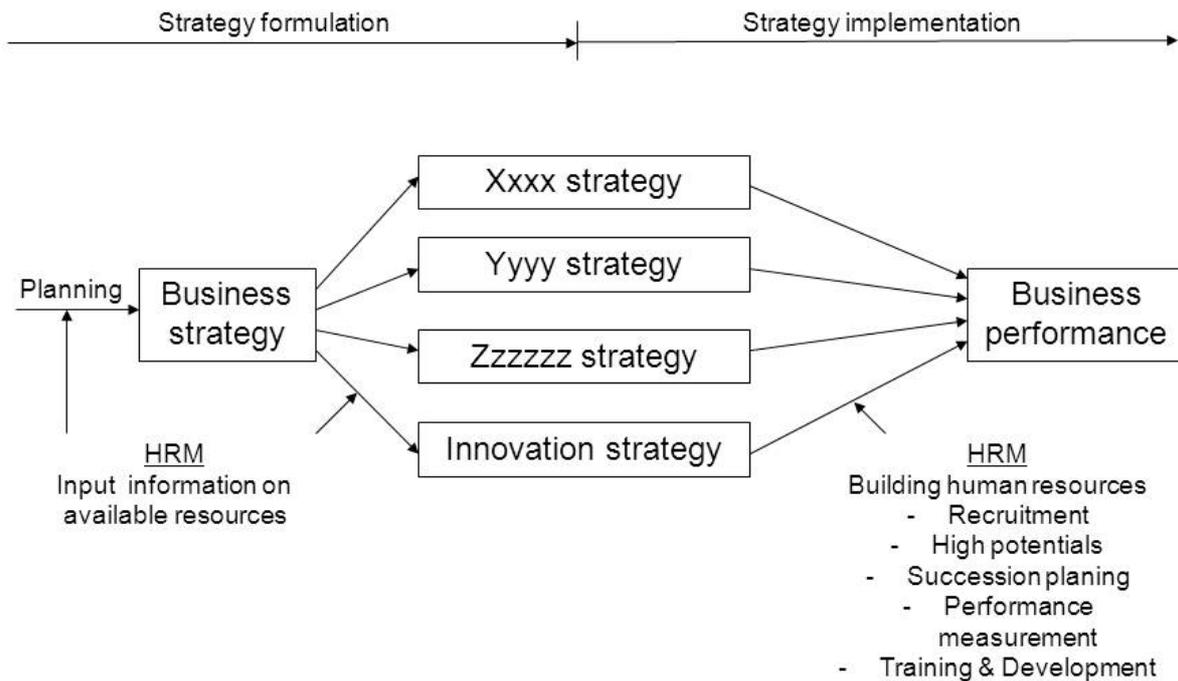


Figure 1. Illustration of the tentative framework

We argue therefore that HRM needs to be used as a strategic means in both the formulation and implementation of Innovation strategy. In the following we will elaborate in greater detail what aspects of HRM that will be in focus of this study.

Skills and motivation

The overall aim of this study is to contribute knowledge on how SHRM can add to the innovation performance of firms. A main tenet that underpins our investigation is that firm output in terms of innovation requires innovation capability. Innovative capability in this study refers to the capacity of a firm to create and implement new or improved products (goods and/or services) (e.g. Subramanian & Youndt, 2005).

A firm's innovation capability depends on its capacity to deploy the resources (inputs) available to it to achieve the desired objective(s) (output). The higher functional capability a firm possesses, the more efficiently it will be in deploying its productive inputs to achieve its functional objectives (Dutta et al., 1999). As human resources are the focal resource of innovation (Cano & Cano, 2006), one important component in a firm's innovative capability is its ability to mobilize and expand its human resources (see e.g. Guan & Ma, 2003). More specifically, HRM is an important function to enhance capabilities among employees and many studies (e.g. Atuahene-Gima, 1996) indicate a strong significant association between support for innovation from HRM and innovation performance.

Drawing on Huselid (1995), it is argued here that two components are of importance to mobilize the human resources of a firm. First, the employees need an appropriate set of skills, and second they need motivation to innovate. When it comes to the former we differentiate between cognitive and behavioural skills (behavioural orientations). In the following the concepts of and motivation and skills will be further developed.

Motivation/engagement for innovation

Motivation is defined as a state of need or a condition that propels an individual to take a certain activities that bring satisfaction. The literature on human motivations differentiates between motivations that are intrinsic (the activity is valued for its own sake) and those that are extrinsic (providing indirect rewards for doing the task at hand) (Ryan & Deci, 2000).

Previous studies indicate that HRM can affect intrinsic as well as extrinsic motivation in different ways. Rewards and promotion are obvious methods to achieve extrinsic motivation. Intrinsic motivation is harder to grasp, but include self-fulfillment and challenging work tasks. Huselid (1995, p. 638) concluded based on Bailey (1993) that “a highly skilled and motivated workforce will be limited if jobs are structured, or programmed, in such a way that employees, who presumably know their work better than anyone else, do not have the opportunity to use their skills and abilities to design new and better ways of performing their roles.” Therefore HRM can also influence innovative capability through provision of organizational structures that encourage participation among employees and allow them to improve how their jobs are performed.

It is important to note that the presence of motivation does not guarantee performance among employees. Its absence, however, guarantees long-term performance problems (Manners, Steger and Zimmerer, 1983). This accentuates the importance of consider motivational issues when building innovation capability.

From a HRM perspective, motivation is an issue to consider in connection to staffing/recruiting, employee training, as well as career planning. When recruiting personnel that fit with the innovation strategy of the firm, firms should search for individuals with an appropriate motivational profile. It also follows that jobs need to be designed as to contain elements of challenge, achievement, and conveying the feeling that work has meaning (Badawy, 1978).

Cognitive and behaviour skills for innovation

In this study we use a taxonomy developed by Birkett (1993), distinguishing between cognitive skills and behavioral skills. One reason for our interest in these two types of skills is they have been discussed as generally important factors with a positive effect on innovation performance (e.g. Corso and Pavesi, 2000; Darroch, 2005).

Cognitive skills

According to Birkett cognitive skills include technical skills (the application of technical knowledge with some expertise; analytical/constructive skills), problem identification and the development of solutions, and appreciative skills (evaluating complicated situations and making creative and complex judgments). Cognitive skills that are technical in nature are defined as the understanding of, or proficiency in, specific activities that require the use of specialized tools, methods, processes, procedures, techniques, or knowledge (Peterson & Van Fleet, 2004).

Cognitive skills can be assessed with traditional tools, such as CVs specifying education and experience, and be developed with education, trainee schedules, or training schemes. In a recruitment situation these are the less problematic to map and assess. In a staff development situation it is also quite assessable how to identify gaps between available cognitive

skills and strategic needs, and the need for complementing these skills with education and training.

Behavioral skills

Behavioral skills include personal skills (how one responds and handles various situations), interpersonal skills (securing outcomes through interpersonal relationships), and organizational skills (securing outcomes through organizational networks). Behavioral skills are built up from personal characteristics such as principles, attitudes, values and motives, which are a function of an individual's personality (Hodges & Burchell, 2003).

Within research on innovation and entrepreneurship, entrepreneurial orientation has been identified as a factor of great importance to improve innovative capability and thereby innovation performance (e.g. Atuahene-Gima 1996, Atuahene-Gima and Ko, 2001; Jantunen et al, 2005). We will therefore pay special attention to the behavioural skill of entrepreneurial orientation.

Prior theory and research make a distinction between the concepts of entrepreneurship and "entrepreneurial orientation" (Lumpkin and Dess, 1996). Entrepreneurship refers to the act of creating new business ventures (e.g. Gartner, 1988). Entrepreneurial orientation refers to an individual's or a firm's strategic orientation, confining specific entrepreneurial aspects of decision making styles, practices, and methods (Lumpkin and Dess, 1996).¹ EO is understood as having three distinct dimensions.

Innovativeness is the first dimension reflecting the tendency "to engage in and support new ideas, novelty, experimentation, and creative processes that may result in new products, services, or technological processes" (Lumpkin and Dess, 1996, p. 142). The second dimension, *risk taking*, is defined as "the degree to which managers are willing to make large and risky resource commitments" (Miller and Friesen, 1978, p. 923). A model of risk behavior, developed by Sitkin and Pablo (1992), distinguishes between risk perception, risk preference, and risk propensity. Risk perception refers to the way an individual or firm perceives a risk, and risk preference refers to the general propensity of people or firms to accept risk, while risk propensity refers to the likelihood of a person behaving in a risky way. *Proactiveness* refers to processes aimed at anticipating and acting on future needs by "seeking new opportunities which may or may not be related to the present line of operations" (Venkatraman, 1989, p. 949). This is an act of opportunity seeking, which when adopted on the level of the firm is understood as when a proactive firm tries to get hold of initiative by acting opportunistically in order to influence and shape the environment (Lumpkin and Bess, 1996).

Methodology

A case study approach was used mainly based on three sources of information; participative research, interviews and the HR handbook available at the intranet. Participative research means that the authors were active as a discussion partners for the R&D Director during the

¹ The concept draws on a resource based view of the firm, suggesting that, different capabilities (such as market orientation, innovativeness, and organizational learning) contribute to a firm's competitiveness and performance.

formulation of the innovation strategy. The interviews were conducted during a two month period in three production units within one business unit. Approximately 30 interviews were conducted in total. For this specific paper interviews with two respondents (HR-director at BU-level and one site manager) are used. The HR-handbook is published on the intranet and includes processes and routines for a number of HR-practices.

Case description

The company has between 10-20,000 employees and belong to medium-high technology industry. Production sites and sales offices are present in more than 30 countries at all the continents. The company has three business units that are highly separated in operations. The most prominent report system is growth and profit, which are targeted in budgets from cooperation's level. The process of formulating and implementing a new overall business strategy and sub-strategies in this business unit started early in 2011. The main purpose was to present new strategies for the forthcoming five years to replace the strategies that had been guiding since 2007.

Analysis and discussion

The business unit has recently launched a new strategy that shall be guiding for the forthcoming five years. Beside an overall business strategy, seven sub-strategies were launched including an innovation strategy (but not a HR strategy). During the strategy development one responsible for each strategy have worked with the document and a few presentations have been made for the group of responsible. However HR has not been involved at all and very little coordination between the developments of each strategy has been identified. The innovation strategy does indeed contain three areas; process, people and culture, but only the process is further elaborated in the strategy. The areas of people and culture are handed over without instructions to "managers and HR at each site". The awareness of people and culture do, however, signal a connection to HR.

On corporate level the HR-director has developed the HR-handbook in some collaboration with HR-directors at BU-level. The HR-handbook contains a number of processes including a work process, some suggested practices/tools, and situations when the processes shall be used. Four processes are mandatory (Recruitment, High potential identification, Succession planning, and Performance assessment). Apart from these mandatory processes, there are a few more processes meant as support. One observation that become clear in studying the HR-handbook, and also appeared in the interviews, is that these processes are suitable for the (innovation) strategy implementation, but less useful in the strategy formulation phase. There are no processes (mandatory or support) that include assessment (mapping) of present human resources or identification of human resource gaps (needs). In interviews respondents from HR are not surprised as the role of HR as being a strategy formulation support has not been in focus on BU-level and below.

It is also interesting to notice that the formulation of the innovation strategy has been made rather disconnected from the formulation of the business strategy and the other sub-strategies. Probably this is valid also for the formulation of the other sub-strategies (that they are formulated rather disconnected), but we have no data to explicitly support this. Therefore we can identify two types of disconnection between formulation of innovation

strategy and other strategies; a) the disconnection from other sub-strategies, and b) the disconnection from the HR-function.

Conclusions, Implications and outlook

As indicated in our analysis shows three main findings. First, HR processes as presented in the HR handbook do not offer support for innovation strategy formulation. Two processes (high potential identification and performance assessment) do offer some relevant information, but only deal with top management. Processes for a broader mapping of human capital to support strategy formulation activities are not developed. It is also obvious from the case that HR competence is not used pro-actively in the actual work with the innovation strategy formulation. Second, HR processes as presented in the HR handbook supports innovation strategy implementation in that the mandatory processes, if using relevant criteria, can support the formulated innovation strategy. It is however important that a mapping of human capital gap between desired and present situation is made. The mapping will support the development of relevant criteria. These mapping tools are presently not in the HR handbook. Third, possible as a result of the first, the HR perspective is very weak in the innovation strategy formulated. The areas of “people” and “culture” appear, but are vaguely delegated to “HR and operative managers” without any guidance from the strategy.

Based on these conclusions we will give some normative suggestions to companies, R&D executives and HR executives. Further we will outline some suggestions for future research.

Implications for managers

At a corporate level our results indicate a need to develop the collaboration between different functions and the use of specialist competence from the different functions when formulating strategies. There are two main reasons for this. First, there is an obvious advantage of using all relevant expertise available in the company when developing strategies. Second, the sub-strategies will be more aligned when involving different functions rather than giving each strategy formulation as a task to separate functions. This should be done by controlling the strategy formulation process in a way that enforces or stimulates concurrence and compromise during the process with the purpose of alignment.

We would, however, not suggest that one sub-strategy is an HR-strategy, but rather that HR is involved in the other sub-strategies and that each sub-strategy has a HR-alignment. This is due to the fact that HR may be different in, for example, production strategy and innovation strategy.

Implications for R&D managers

When formulating the innovation strategy it is important to involve HR as human resources are specifically important in the sub-strategy innovation strategy. Especially from an HR perspective it is important to get an appropriate mapping of the human resources present in the company. The present human resources from the mapping will form one input the formulation of the innovation strategy that should be combined with external technology and market situation as well as other types of internal assets (laboratories, patents, etc.).

Further, R&D managers should use HR that can contribute to the formulation of the innovation strategy with expertise about availability of certain key competences needed for the

innovation strategy. HR can contribute with reports on if, where and how key competences can be found whether it is on the labour market, from certain universities, in competing companies or within the company.

When implementing the strategy R&D managers are recommended to use the competence from HR particularly in two ways. First, HR can identify gaps in human resources between the current situation and the situation desired in order to fulfil the innovation strategy. This is a second type of mapping where HR should possess a valuable competence. Second, HR will be an important operational function that can recruit, train and promote internally in order to fill the gap identified. R&D managers should work with these processes together with HR, as it is also important that an R&D manager can support the development of relevant criteria to search and select the right human resources.

Implications for HR managers

An important finding, which is also supported in previous research, is that HR is not sufficiently involved in the strategy formulation process. HR should develop useful processes and tools to be able to supply R&D managers with a relevant mapping of human resources as an input to the innovation strategy formulation process. One reason that HR is not involved is probably that it cannot presently contribute with the type of information needed. In order to be a useful player in the strategy formulation HR should assess which competences, processes and tools need to be developed.

It is also important that HR has a competence to think strategically, rather than primarily being of administrative nature. The assessment of HR and development of HR competence is a strategic issue for senior management and HR at a cooperate level.

When implementing the innovation strategy, HR can contribute in two ways. First, by mapping the gaps in human resources between the current situation and the situation desired. Also in this phase HR should develop processes and tool that contribute to the needs. In this phase it can be noted that such tools should assess cognitive as well as behavioural skills. Especially regarding the innovation strategy it can be assumed that behavioural skills will be of importance. If a database of employees can be cross-referenced with a desired situation that will contribute a road-map for how the gaps in human resources can be filled.

Second, HR will be of greatest importance in the implementation with its processes and competence in recruitment, identifying high potentials, succession planning, training and development and performance assessment. It should be noted that the close collaboration between HR and R&D in identifying criteria for search and selection of complementary human resources are very important.

Suggestions for future research

Tools to map current HR situation are needed, especially when it comes to how to handle the balance between cognitive and behavioural skills.

We would also like to emphasise that motivation is a variable that needs more attention, as skills will not produce improvement if motivation is lacking. One interesting question is if HR shall focus on creating motivation with, for example compensation and reward systems, or on identifying individuals with intrinsic motivation. In the area of identifying intrinsic motivation we have not found much research, which practically develops assessment methods and tools.

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