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## **DEVELOPING CHARACTERISTICS OF AN INTRAPRENEURSHIP-SUPPORTIVE CULTURE**

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### **Abstract**

Intrapreneurship is a topic with a high attraction equally to many scholars and managers in companies of any size nowadays. It is defined as entrepreneurship within existing organizations and became a subject of interest because of its effects on organizational revitalization, innovation, and the creation of new business activity. Intrapreneurship is especially important in the context of industrial R&D to develop radical product innovation as the initial phases to create new domains of business that are unrelated to the current mainstream activity of the established firm.

This paper aims at developing characteristics of an intrapreneurship-supportive culture in order to facilitate intrapreneurship over time – that is, to make it happen again and again. An emergent body of literature stresses that entrepreneurial and innovating behaviours of both individuals and firms depend on cultural factors. However, still it is not fully clear how to define, build, and measure such culture that supports intrapreneurship in industrial R&D.

Therefore, an extensive literature investigation has been conducted in order to identify relevant culture-bound factors that support intrapreneurship in industrial R&D. In total, 101 scientific but also practice-oriented contributions in the domain of innovation, entrepreneurship, and intrapreneurship have been studied. Guided by theory on national, professional, and corporate culture, a six-dimensional framework of intrapreneurship-supportive culture has been conceptualized.

Keywords: intrapreneurship, innovation, national culture, professional culture, corporate culture.

## **DEVELOPING CHARACTERISTICS OF AN INTRAPRENEURSHIP- SUPPORTIVE CULTURE**

### **1 Introduction**

Intrapreneurship is a topic with a high attraction equally to many scholars and managers in companies of any size nowadays. Intrapreneurship can be broadly defined as entrepreneurship within existing organizations, and there is broad consensus both in academia and business practice about the relevance and the need of bringing entrepreneurship into the settings of established companies. Already Schumpeter (1934), who stated that “new enterprises are mostly founded by new man and the old business sink into insignificance”, identified the need to instil the logic of entrepreneurship into the established businesses. And what Drucker (1985) stated some twenty years ago, that “today’s businesses, especially the large ones, simply will not survive in this period of rapid change and innovation unless they acquire entrepreneurial competence”, still seems to hold true today. Besides existing small and medium sized companies (Aaltio, 2002; Carrier, 1994, 1997; Fayolle, 2003; Veenker *et al.*, 2004), especially big companies are turning towards intrapreneurship because they are not getting the continual innovation, growth, and value creation that they once had (Heinonen & Korvela, 2003; Mair, 2005; Pinchot, 1985; Pinchot & Pellman, 1999).

Moreover, intrapreneurship is especially important for R&D as an important source of technical knowledge to develop radical innovation – that is, the discovery and exploitation of completely new business opportunities that go beyond the existing mainstream business of the firm (Antoncic & Hisrich, 2003; Burgelman, 1983; Fayolle, 2003; Hornsby *et al.*, 2002; Kelley *et al.*, 2002; Klein, 2002; Klein & Specht, 2002; Lorange, 1999; Vanhaverbeke & Kirschbaum, 2005). In this way mature organizations, that may miss these opportunities, can develop new business activity based on highly innovative technology that is ahead of competition and creates completely new customer needs which the latter is not yet aware of. Yet, especially large, industrial companies have difficulty to accommodate intrapreneurship and to manage radical innovations. Mostly, R&D in these companies focuses on the short-

term and emphasizes incremental innovations that require the exploitation of existents resources and pathways rather than on radical innovations that demand the exploration of new and unknown paths. Furthermore, R&D engineers and scientists often are not entrepreneurial at all in their approaches. They focus too much on technical issues and lack an integrated approach.

In order to facilitate intrapreneurship in R&D – that is, to make it happen again and again – both individual intrapreneurs and a supportive organizational setting must be present simultaneously. In this respect, an emergent body of literature seeks to identify the conditions required for intrapreneurship to occur in organizations (Carrier, 1994). More specifically, several authors stress that entrepreneurial and innovating behaviours of both individuals and firms depend on cultural factors (Anfuso, 1999; Carrier, 1994; Eesley & Longenecker, 2006; Fayolle *et al.*, 2005; Miles & Covin, 2002; Morris *et al.*, 1993; O'Connor & Ayers, 2005; Smith, 1998; Sommerlatte, 2001; Ulijn & Brown, 2004; Ulijn *et al.*, 2001; Ulijn & Weggeman, 2001). Such a culture would build on all principles relating to the way an organization operates that will raise opportunities of creating profitable newness or difference in doing business. But what does this mean more concretely? What kind of organizational structures and resources should be available? What has to be provided by top management? And what are the requirements on the team and on the individual level?

Still, it is not fully clear how to define, build and measure such culture that support intrapreneurship in its entirety. A big body of both scholarly and practice-oriented literature deals with this topic but a holistic approach towards modelling intrapreneurship-supportive culture still seems to miss. Hence, this work aims at identifying the relevant contributions in this domain. Based on an extensive literature review, intrapreneurship-supportive culture is conceptualized as an intersection of national, professional and corporate culture types. A framework is proposed that – once further developed and empirically tested – would serve as an instrument both to measure and to determine relevant levers to shape intrapreneurship-supportive culture. First, Section 2 explores the underlying concepts of intrapreneurship-supportive culture, namely national, professional, and organizational culture. Second, Section 3 provides an overview about the work and research done in the field of innovation- and intrapreneurship-supportive culture. Based on this knowledge, the determinants of an intrapreneurship supporting culture are elaborated and conceptualized in a holistic

framework which will help to model and measure intrapreneurship-supportive culture. Finally, Section 4 discusses the results and gives recommendations on how to build and maintain an intrapreneurship-supportive culture on the operational level.

## 2 Building blocks of intrapreneurship-supportive culture

An appreciation of the importance of culture and cultural differences has high relevance for entrepreneurship and innovation. From an organization's point of view, innovation activities are basically built around interaction processes between individuals and the surrounding organization, including the interaction and transfer of people across national, professional and corporate cultural boundaries. The seminal research by Hofstede (1980) has inspired much of the cross-cultural research activity since 1980 and has been one of the dominant research paradigms in cross-cultural studies. Culture, as Hofstede suggests, is something like the "software of the mind", the operating system that allows human individuals to share and make sense of experience (Hofstede & Hofstede, 2005). It refers to a set of shared norms, values, beliefs and attitudes held by the members of a group, such as a nation or organization (Hofstede & Hofstede, 2005). Culture is the means by which people communicate, develop and perpetuate their attitudes towards life and work in order to interpret their experience and guide their actions (Trompenaars & Hampden-Turner, 2001).

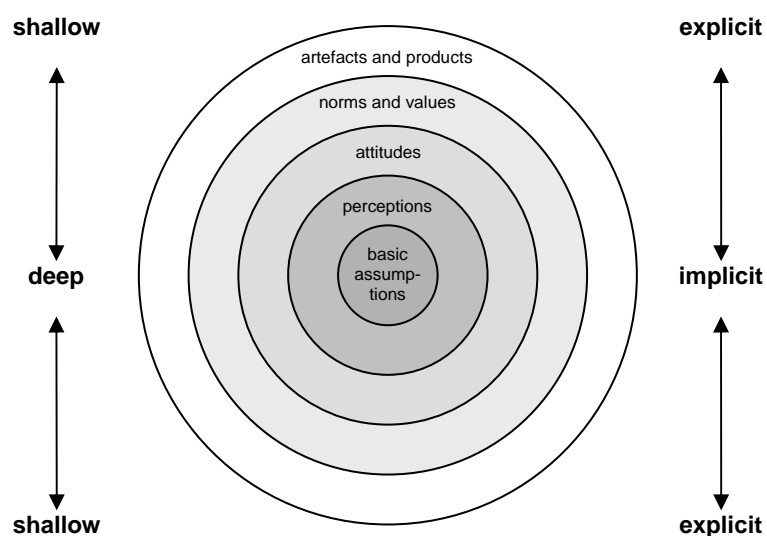


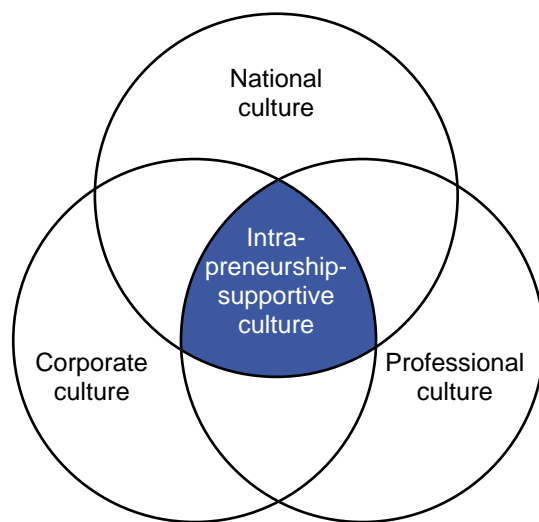
Figure 2-1: The onion metaphor of culture (adapted from Ulijn & Fayolle, 2004)

The essence of culture is not what is shallow, clearly visible on the surface; more important are the shared ways by which groups of people understand and interpret the world. This essential core of culture consists of traditional, that is historically derived, selected and learned basic assumptions (Kroeber & Kluckhohn, 1952; Trompenaars & Hampden-Turner, 2001). As depicted in Figure 2-1, culture comes in layers, like an onion, and to understand it you have to unpeel it layer by layer (Hofstede & Hofstede, 2005; Schein, 2004; Trompenaars & Hampden-Turner, 2001).

The metaphor of the onion (see Hofstede & Hofstede, 2005; Schein, 2004), as the one of the iceberg (Selfridge & Sokolik, 1975), plainly illustrates the layered structure of culture from the explicit, clearly visible outside/top of artefacts and products to the implicit, invisible, inside/bottom layers and elements of culture. On the outer layer, explicit culture is the observable reality of the language, food, buildings, houses, monuments, agriculture, shrines, markets, fashions and art. The middle layers encompass norms, values, and attitudes; they are not directly visible. Norms are the mutual sense a group has of what is right and wrong; they can develop on a formal level like written laws, and on an informal level like social control. Values determine the definition of good and bad, and are therefore closely related to the ideals shared by a group. While norms, consciously or subconsciously, give us a feeling of “this is how I normally should behave”, values give us a feeling of “this is how I aspire or desire to behave”. The core of culture consists of basic assumptions about existence referring to the basic question: why have different groups of people, consciously or subconsciously, chosen different definitions of good or bad, right or wrong? These assumptions are based on fundamental relationships of the human being with the (natural) environment. They signify the deepest meaning of life that has escaped from conscious questioning and has become self-evident, because it is a result of routine responses to the environment.

Recognizing and understanding differences in cultural patterns, across all layers of the onion metaphor, provides individuals with a framework for interpreting the goals, motivations, and behaviours of others. Intrapreneurship-supportive culture can be understood as a set of culture-bound patterns shared by a group of individuals. These patterns are shaped, changed or maintained through the interaction between individuals of the group or organization. These interaction processes are fed by each single individual's “learned” cultural background. People are born in a national

culture context, acquire a certain professional culture, in particular starting from the age of 18 or earlier depending on the educational level, and are then exposed to a corporate culture when entering a company to work with. Given the accumulated influence of these three culture types on intrapreneurship-supportive culture, national and professional culture types would represent more individual-related values (more invisible, implicit, the inner heart of the onion) and corporate culture would then refer to more organization-related norms and practices (more visible, explicit, the outer layers of the onion). Thus, conceptualizing intrapreneurship-supportive culture as an integration of national, professional and organizational culture types seems to be the logical step (see Figure 2-2).



**Figure 2-2: Intrapreneurship-supportive culture as the nexus of national, professional and corporate culture types**

In this line, intrapreneurship-supportive culture would refer to the set of shared norms, values, attitudes, perceptions, and beliefs held by a group of individuals, like for instance the R&D department, new product teams, or new venture divisions.

Determining the exact importance of national, professional, and corporate culture would be difficult. National culture certainly plays an important role, but we can not neglect other levels of culture (Fayolle et al., 2005). All group members have individual cultural backgrounds and hold passports for both the national culture in which they grew up, the occupations in which they were trained, and the organizations in which they work. Anyway, as Ulijn & Weggeman (2001) point out, these three

culture types are most relevant for an individual's education and working experience and can, therefore, be considered as constituents of intrapreneurship-supportive culture. Therefore, the following sections briefly introduce the concepts of national, professional, and corporate cultures.

## **2.1 National cultures (NC)**

The most widely studied level of culture is national culture. Research rests on the belief that differences exist between nations as far as their basic assumptions of human behaviour and mutual perceptions are concerned which seriously challenges the universality assumptions that underlie many management theories (Thomas & Mueller, 2000). In the modern, globally oriented business world the confrontation with foreign cultures is constitutional, and the reports on the importance of cultural awareness in (international) business communication are numerous. National cultures can be investigated under many different aspects, but most frequently Hofstede's (1980, 2001) typology of national cultures is used. He defines culture as "the collective programming of the mind which distinguishes the members of one group from an other". Hofstede's framework is based upon a study using an existing data base from a large, multinational corporation (IBM) containing files of 116,000 survey questionnaires from employees who worked in IBM's national subsidiaries in 64 countries worldwide. Hofstede's survey reveals four underlying dimensions of culture, later complemented with a fifth dimension (Hofstede & Bond, 1988), as introduced in Table 2-1.

**Table 2-1: A typology of national cultures (Hofstede, 1980, 2001; Hofstede & Bond, 1988)**

- *Low vs. High Power Distance (PDI)* refers to how individuals view power differentials within a society.
- *Low vs. High Uncertainty Avoidance (UAI)* refers to how upset people get about ambiguity and future doubt.
- *Individualism vs. Collectivism (IND)* refers to the degree to which people prefer to act as individuals rather than as members of groups.
- *Masculinity vs. Femininity (MAS)* refers to the extent of clarity and distinctiveness of gender roles.
- *Long-Term vs. Short-Term Orientation (LTO)* – originally labelled Confucian Dynamism – opposes a long-term to a short-term time orientation in life and work.



How important is national culture for intrapreneurship-supportive culture? As intrapreneurship requires common efforts of individuals and their interactions at work, a culture being supportive for intrapreneurship must certainly be influenced, or even determined, by national culture. Indeed, there is a lot common sense arguing why Hofstede's five dimensions of national culture are expected to stimulate or hamper intrapreneurship and innovation. Before discussing this relationship in Section 2.4, it is necessary to look beforehand at the two other cultural concepts that are considered relevant for intrapreneurship-supportive culture.

## **2.2 Professional cultures (PC)**

All major professional orientations and functions within organizations –as for instance marketing, research and development, or human resource management – can be distinguished regarding a wide scope of factors, and particularly regarding cultural factors such as specialized knowledge, shared experience, ethical orientation and professional commitment that others do not have (Bloor & Dawson, 1994; Fayolle et al., 2005; Trompenaars & Hampden-Turner, 2001). A profession's culture grows out of the characteristics of the people who make up the profession, and from the skills used in their practice. Professional cultures are especially constituted through the “work styles” individuals enact as they conduct routine work (Leonardi et al., 2005).

Also, it is increasingly likely that individuals do not feel loyal to the company any more but rely upon other members of the same profession as their primary source of reference (Bloor & Dawson, 1994; Fayolle et al., 2005; Wever, 1992). The shared experiences and ethical orientations have a unifying impact on business relationships and are reinforced by professional associations, which serve as sources of information, education and mutual support. Such networks are a source of information about technology, employers, or job prospects, and networking activities are almost always conducted in a spirit of reciprocity. More broadly speaking, Sirmon & Lane (2004) identify the concept of professional culture that “exists when a group of people that are employed in a functionally similar occupation share a set of norms, values and beliefs related to that occupation. Professional cultures develop through the socialization that individuals receive during their occupational education and training”.

Professional cultures do not only interact – and partly conflict – with national cultures, but also with the corporate culture of the given work context, as an organization or project team. They filter personal experiences and influence interpretations and responses to the organizational practices (Leonardi et al., 2005). This is, for instance, relevant, when an individual enters a new organization and is confronted with new cultural patterns due to the given corporate culture. Most probably, culturally learned behaviour and experience is not (fully) inline with the existing organizational practices and must be adjusted accordingly, or even sometimes learned by hard. The following section, therefore, regards corporate – also organizational – culture as the third major cultural concept influencing intrapreneurship-supportive culture.

### **2.3 *Corporate cultures (CC)***

Innovation is carried out and developed by individuals, but the institutional context is provided by organizations. The concept of corporate culture, also labelled organisational culture, has become popular since the early 1980s. There is no consensus about its definition, but most authors will agree that it is something holistic, historically determined, socially constructed, soft, and difficult to change. It is something an organisation has, but can also be seen as something an organisation is. As corporate culture would be the organizational and structural context to develop an intrapreneurship-supportive culture, the crucial question therefore is what makes some organizations more innovative than others, or, as Hofstede et al. (1990) put it, what represents (and distinguishes) organizations from a cultural point of view.

Organizations, as social systems, are phenomena which are created through people and are, thus, part of culture (von Rosenstiel, 2000). Basically, corporate culture can be defined as “the personality of the organization that is comprised of the assumptions, values, norms and tangible signs (artefacts) of organizational members and their behaviours” (Schein, 2004); it is the way, that people in the organization accomplish their work, relate to one another, and solve the problems that confront them on a daily basis. Basically, corporate culture is the way the organizational members think, talk and work (Fayolle et al., 2005). Table 2-2 provides an overview of often cited and used typologies of corporate cultures.

**Table 2-2: Typologies of organizational/corporate cultures (CC)**

Handy (1976)	<ul style="list-style-type: none"> <li>• Power Culture</li> <li>• Role Culture</li> <li>• Task Culture</li> <li>• Person Culture</li> </ul>
Deal & Kennedy (1982)	<ul style="list-style-type: none"> <li>• Tough Guy Macho Culture</li> <li>• Work Hard/Play Hard Culture</li> <li>• Bet Your Company Culture</li> <li>• Process Culture</li> </ul>
Hofstede et al. (1990)	<ul style="list-style-type: none"> <li>• Process-Oriented vs. Results-Oriented</li> <li>• Employee-Oriented vs. Job-Oriented</li> <li>• Parochial vs. Professional</li> <li>• Open System vs. Closed System</li> <li>• Loose Control vs. Tight Control</li> <li>• Normative vs. Pragmatic</li> </ul>
Schneider & Barsoux (1997)	<ul style="list-style-type: none"> <li>• Village Market, Anglo/Nordic cluster</li> <li>• Family or Tribe, Asian cluster</li> <li>• Well-Oiled Machine, Germanic cluster</li> <li>• Traditional Bureaucracy, Latin cluster</li> </ul>

Literature suggests that corporate culture is most relevant for how innovation processes run in organizations (Chandler *et al.*, 2000; Peters & Waterman, 1982; Sherwood, 2002) because it gives the organizational context and basement to develop a culture that is supportive of intrapreneurship – that that is, whether or not it is safe to generate new ideas, and how ideas are evaluated, developed, and implemented.

Yet, as already mentioned further above, it is not sufficient to consider only the concept of organizational culture. We must not neglect that it is the individual who is carrying out innovative activities; the company, in which these activities are embedded, only provides an organizational setting. Given the accumulated influence of culture on the individual’s personality, one might wonder how heavily corporate culture is actually weighing. Hence, the following sections discuss in more detail how national, professional, and organizational cultures interact and influence an intrapreneurship-supportive culture.

#### ***2.4 The interaction of national, professional, and corporate culture***

The human behaviour in companies is obviously influenced by the national culture of the country which the individuals and the companies are based in. As national culture is already “programmed” into individuals’ minds early in life, where the family and

later school and friends are important cultural influences, behaviour tends to be, on average, more or less consistent with this national culture (Hofstede, 2001; Wennekers *et al.*, 2002). With regards to the context of intrapreneurship, this finds support from earlier work suggesting that national culture, or at least some of the five Hofstedian dimensions, has a significant impact on how entrepreneurship and innovation is achieved (Fayolle *et al.*, 2005; Nakata & Sivakumar, 1996; Ulijn *et al.*, 2004). Shane *et al.* (1995) and Shane (1997), for instance, pinpoint national culture as a leading principle for innovative output and performance of organizations. Also Jones & Davis (2000) study the link between dimensions of national culture and innovative activities and the implications for locating global R&D operations. They conclude that national culture affects innovation and should be considered as a factor informing the location decision for innovative capabilities.

Not only national culture plays an important role for intrapreneurship, also the influence of professional culture and its interaction with national culture can not be neglected. Professionals entering an organization bring in a large repertoire of cultural knowledge gained not only from the wider society but also from their professional training and previous work experience (Bloor & Dawson, 1994). Professional culture orientations already find their roots during childhood and early years of education, and an interest shown for certain subjects – such as mathematics/physics, languages, biology/chemistry, etc. – might give an indication about a professional orientation in the future. A more important influence of professional culture is given later through the professional education or the studies one opts for. Certainly, both professional training on the job and university studies determine and stabilize one's professional orientation or tendency.

The well studied example of the contrasting professional cultures of engineers and marketers explicates that the individuals' education and subsequent professional career development may have a significant impact on the pursuit of innovation. These two occupations have totally different views about the relationship of the whole organization to the environment and, more specifically, about what innovation means and how it is to be achieved (Fayolle *et al.*, 2005; Griffin & Hauser, 1996; Ulich, 1990; Wiebecke, 1987). R&D considers the technological and scientific relationship to the environment as crucial. This means that the scientific and technical quality of the products justifies the existence of the whole firm. The provision of technically

useful products to the environment is the fundamental task of the organization. Indeed, literature suggests that many engineers and engineering firms are too technically driven and have difficulty understanding market needs (Finniston, 1980; Rochester, 2002; Souder, 1981a, 1988; Ulijn et al., 2001). Engineering is generally perceived as a detail-oriented occupation with a focus on solving technical problems. This is related to somewhat longer time horizons in order to be able to anticipate the future. Marketing, in contrast, regards the firm's role in the market as most important: the invested financial input and profit is obtained by supplying products that suit best the demand in the market. The organization survives through its commercial activities. Marketing also has a shorter time perspective than R&D based on a today-orientation and a focus on the rapidly changing markets and customer needs. This admittedly superficial comparison of two occupations that are generally involved in innovation processes shows how relevant it is to consider professional culture as a determinant of intrapreneurship-supportive culture.

Recent innovation literature, for instance, advocates the transition from a technology (R&D and engineering culture) towards a market orientation (business administration and marketing culture) on the part of the innovator or intrapreneur (Chesbrough, 2003; Salomo *et al.*, 2003b; von Hippel, 2005). Furthermore, there are preliminary indications that there may even be differences in professional cultures across national cultures, and to complicate matters even more, they may interact in unexpected ways (Ulijn & Weggeman, 2001). Ulijn et al. (2001) report a study that indicates that not only the professional background as such, but its interaction with national culture is decisive for this transition process. The study examines factors among German and Dutch engineers that account for a different transition from a technology towards a market orientation and the impact of national cultures. The study found that the technology versus market orientation of the Dutch engineer is not different from that of the German engineer, probably because of a common professional engineering culture, which is, generally speaking, not build on market orientation. However, the transition from technology towards market orientation occurred earlier for the Dutch engineers than for the German ones. A plausible reason for this is that the strong feminine values of Dutch national and corporate culture (Hofstede, 1980) might lead to a customer orientation more easily than the more masculine German values keeping a strong internally driven technological base.

Besides national and professional culture, corporate culture is commonly understood as having a strong impact on innovation (Chandler et al., 2000; Peters & Waterman, 1982; Sherwood, 2002). This brings about the question why certain types of organizations are perceived to be more innovative than others, but also the question what type of organizational culture this would refer to. And what organizational culture would be most appropriate to support intrapreneurship? For instance, Hofstede et al.'s (1990) typology includes dimensions of organizational culture that appear to be crucial for innovation, such as the open system, loose control or pragmatism. Ulijn & Weggeman (2001) stress that an innovation-supportive culture would prosper in an organization that grounds on a combination of the clan/Anglo-Nordic and the guided missile/Germanic culture types. Thus, dimensions of corporate culture certainly influence intrapreneurship-supportive culture and, in turn, the innovative output and performance of a firm.

However, as the influence of corporate culture on individuals' personality occurs rather lately in their careers, together with a tendency towards increased job rotation across both national and corporate culture borders, its impact on intrapreneurship-supportive culture might be weaker than often assumed. Research indicates that even in companies that are known for their strong corporate culture, national culture remains of paramount importance in explaining its employees' business-related behaviour (Hofstede, 1994; Hofstede et al., 1990). National culture differences are reflected, for instance, in the way how organizations solve problems in different countries, but also in the validity of management theories in the countries. Different national cultures have different preferred ways of structuring organizations and different patterns of employee motivation. For example, they limit the options for performance appraisal, management by objectives, strategic management and humanization of work.

Corporate culture is nothing more than the way in which organizations have organized themselves over the years to solve problems and challenges presented to them. It is shaped through influences ranging from the societal level through to the individual member of the organization, that is, influences of national and professional culture. It is due to these individual-based influences that— especially large – organizations are unlikely to exhibit a homogenous corporate culture across the entire organization; rather individuals and groups, enforced through high turnover of employees, all

mitigate against a unitary organizational culture (Bloor & Dawson, 1994). This can be clearly visualized by the onion metaphor of culture. Corporate culture is both the determinant and result of organizational structures, processes, and routines and provides, therefore, the organizational context of innovation-supportive practices. Those practices lie in the outer layers of the onion model and are not as deeply rooted as national and professional culture elements. This finds support from Hofstede et al. (1990) who empirically show that shared perceptions of daily practices are the determinants of an organization's culture implying that corporate culture might be less deeply rooted and perhaps easier to change than national or professional cultures.

Given this, intrapreneurship-supportive culture would be formed through the intersection of national, professional, and corporate culture types. People are born in a national culture context, acquire a certain professional culture, and then they are exposed to the corporate culture of the organization they enter. With regards to the onion metaphor of culture, this time line might explain that values acquired first remain to be the strongest towards the end of one's professional life, including one's professional culture. Hence, an intrapreneurship-supportive culture seems to be very much rooted in the national and also professional culture imprints of the individuals. This is the picture that provides the basic understanding and framework to guide the development of a holistic conceptualization of intrapreneurship-supportive culture. The objective of the following section is, therefore, to collect – based on a literature investigation – evidence that helps to conceptualize intrapreneurship-supportive culture.

### **3 Towards a comprehensive model of intrapreneurship-supportive culture**

In order to gain a holistic picture of what intrapreneurship-supportive cultures does mean and what its constituents are, a literature review has been conducted. In total, more than 101 relevant publications from scientific libraries and databases as well as internet and company sources have been identified and processed. The goal was to identify all relevant culture-bound factors that can be used to describe intrapreneurship-supportive culture in its entirety. Accordingly, the first effort was to compile an unstructured list of factors or quotations that are deemed to characterize a culture being supportive of intrapreneurship. Given the total number of contributions,

we may assume that all collected statements would together describe what intrapreneurship-supportive culture could be about. This early stage of analysis revealed that the contributions in the domain can roughly be grouped into two streams of literature.

The first body of literature can be characterized as qualitative and descriptive, attempting to provide characterizations and suggestions for organizational improvement and change towards a better culture or climate that is supportive for innovation and intrapreneurship. However, the characterisations are rarely structured, consistent, and holistic in their approaches; some mix input and output variables, or factors and outcomes, others do not clearly distinguish between constituents and enablers of intrapreneurship-supportive culture. Furthermore, empirical evidence about the relevance and applicability of these approaches is mostly missing. It remains unanswered whether these characterizations have a positive impact on R&D, innovation, or firm performance. Accordingly, it is difficult to draw robust conclusions and recommendations towards cultural change. A further shortcoming of these qualitative characterizations is that the abovementioned impacts of national, professional, and organizational culture are not taken into account. However, an intrapreneurship-supportive culture would implicitly incorporate the different culture types, as described earlier in this contribution.

The second stream of literature tackles the question whether, how, and why national culture (according to Hofstede, see Section 2.1) affects intrapreneurship – that is, innovation capabilities, innovation output, or innovation performance of organizations. Apparently, these contributions are more rigorous when it comes to scientific properties and requirements but still do not cover intrapreneurship-supportive culture comprehensively enough. Explaining the relation between (some) elements of national culture and innovation, this stream of literature does not integrate culture-bound factors that belong to the apparently important concepts of professional or organizational culture. Moreover, these contributions neither prove whether Hofstede's five dimensions of national culture completely and comprehensively cover and explain intrapreneurship-supportive culture, nor do they reveal whether all five dimensions are really needed. Further, they do not provide any concrete recommendations for action in order to shape and change culture on a company or

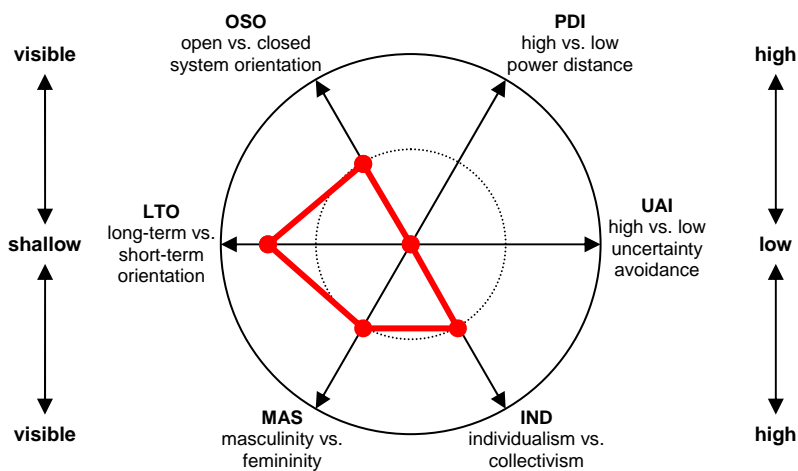


R&D department level (which represent relevant levels of analysis when looking at intrapreneurship-supportive culture within organizations).

In order to overcome these shortcomings and to capitalize on the available body of knowledge, the existing contributions have been synthesized in a systematic way. Departing from Ulijn & Weggeman's (2001) conceptualization of innovation culture, intrapreneurship-supportive culture would occur as the nexus of national, corporate and professional culture types. Their conceptualization is based on a combined national/corporate culture framework consisting of the five dimensions power distance (PDI), uncertainty avoidance (UAI), individualism (IND), masculinity (MAS), and long-term orientation (LTO) as well as a sixth additional dimension called innovation drive (IDR) to integrate professional culture orientations of R&D and marketing. In this way the impact of culture on both the individual (nexus of national and professional culture) and the organizational level (nexus of national and organizational culture) of the innovation process should be taken into account. Given this, in the next step all factors that have been identified in the scope of this literature investigation have been clustered according to this framework. The big majority of factors found a proper place but a number of items – which can be grouped into four clusters titled open system/innovation, creativity, organizational learning, and teamwork – could not be assigned properly.

A deeper analysis revealed that the dimension innovation drive (IDR) resembles very much the open innovation cluster. Ulijn & Weggeman introduced the IDR dimension to integrate the aspect of professional culture in their combined national/corporate culture framework. IDR basically reflects the orientations of two professional cultures that are considered relevant for innovation. These are R&D/engineering, emphasising internally-driven technology push, and marketing, centring on externally-driven market pull. However, open innovation means more than just technology push versus market pull. It is about the coexistence of internal and external factors and sources of innovation along the whole value chain: funding of innovation, idea generation, sourcing and sharing of knowledge, joint development, marketing, and distribution (Chesbrough, 2003; Reichwald & Piller, 2005; von Hippel, 2005). Given this, the IDR dimension has been redesigned in order to cover the idea of an open versus a closed innovation system, now called open systems orientation (OSO).

For the rest of the not assignable items (that is, the clusters covering creativity, organizational learning, and teamwork), it seems that they can not be seen as factors of intrapreneurship-supportive culture, but rather as independent constructs on which the different dimensions of culture have an impact, and vice versa. Regarding teamwork, not only individualism vs. collectivism but also power distance, masculinity vs. femininity, as well as open versus closed system may play a role in this respect. Like for teamwork, it seems that creativity can not be assigned to one of the six dimensions of intrapreneurship-supportive culture either. As Ulijn & Weggeman (2001) speculate, creativity is compatible with high individualism and low power distance and, therefore, seems to be rooted in cultures having those values. However, we would even assume again that creativity builds upon an intersection of several cultural dimensions, such as low power distance, uncertainty avoidance, individualism, femininity, and long-term orientation. Similar conclusions can be drawn for organizational learning which is a result of innovative activity rather than a cultural antecedent.



**Figure 3-1: An ideal profile of intrapreneurship-supportive culture?**

Finally, all factors that have been identified through this literature investigation could be assigned to one of the six dimensions and constructs outlined right before: either to one of the five dimensions PDI, UAI, IND, MAS, and LTO, or to the new, sixth dimension OSO, or to the seemingly independent constructs creativity, teamwork, and organizational learning. This leads to the following conceptualization of intrapreneurship-supportive culture, including a proposition of an ideal profile, as

depicted by the radar plot in Figure 3-1. In this conceptualization, each of the six dimensions of intrapreneurship-supportive culture can take scores ranging from low to high. Accordingly, the ideal profile of intrapreneurship-supportive culture would be constituted by low PDI, low UAI, medium IND, medium MAS, high LTO, and medium OSO which are explicated in more detail in the following sections (3.1 – 3.6).

### **3.1 Power distance (PDI)**

Power is an integral part of innovation activities. It is needed to facilitate, orchestrate and shape innovation (Dougherty & Hardy, 1996; Kanter, 1983), and often organizations resist innovative ideas because of the allocation of power in organizations and inertia (Shane et al., 1995). This is because the way of how power is distributed and structured within the society or organization is a question of culture. Power distance indicates how individuals regard power differentials within the society or organizations (Hofstede, 1980). In cultures scoring low on power distance, emphasis is put on egalitarian values, meaning that people prefer democratic leadership, cooperative strategies and striving for consensus. Authority is distributed equally, and power is a matter of facts rather than positions, and people aim at democratic leadership, cooperation and consensus. In contrast, cultures with high scores of power distance accept and expect that power is not distributed equally within the society or an organization. They tend to adhere more rigidly to organizational hierarchies, prefer centralized decision making, they accept authoritarian leadership and obedience to superiors.

Innovation depends strongly on interaction, information sharing, and debates between people across disciplines and hierarchies (Anfuso, 1999; Ekvall, 1996; Nicholson, 1998; Rice, 2003). For instance, Damanpour (1991) found a positive association between internal communication and organizational innovativeness. And, in the same line, McDermott (1999) emphasizes that it is important to develop existing knowledge communities within an organization without formalizing them. Thus, organizations have to create situations where interaction and communication is possible (Ahmet, 1998; Bretani & Kleinschmidt, 2004; Haskins & Williams, 1987; Hisrich, 1990; Martins & Terblanche, 2003; McGinnis & Verney, 1987; Ottum & Moore, 1997; R. D. Russell, 1999). An intrapreneurship-supportive culture builds on policies and practices – supported by organizational structures – that maximize the likelihood that

people meet (by chance), communicate openly, share ideas and information, listen to and learn from each other, and develop a culture of mutual trust and support (Anfuso, 1999; Bingham, 2003; Eesley & Longenecker, 2006; Ekvall, 1996; Fishman, 2000; Frohman, 1998; C. J. Russell & Russell, 1992; Sherwood, 2002; Thwaites, 1992; Ulijn & Weggeman, 2001). Important is that innovators and R&D teams adopt participative approaches and aim at widespread support for innovative projects before formal attention is paid by those in authority. This support enables the participants to convince the decision makers that innovation needs broad-based support in the organization (Ahmet, 1998; Cooper & Kleinschmidt, 1995; Frishammar & Hörte, 2005; Hisrich, 1990; Kahn, 1996; Kanter, 1985; Kumpe & Bolwijn, 1994; Luchsinger & Bagby, 1987; Martins & Terblanche, 2003; McGinnis & Verney, 1987; Ottum & Moore, 1997; Pinchot, 1985; Rodriguez-Pomeda *et al.*, 2003; R. D. Russell, 1999).

Innovation efforts will obviously fail when goals and directions are made only by a few people in the top and then forced top-down. They should be discussed, deliberated and changed, based on feedback from and communication between people at all levels: top down, bottom up, and all across functions and disciplines. The leaders should constantly walk around listening, asking questions and “looking under rocks” in order to find what is unexpected and then help the employees in pursuing their innovative ideas (Eesley & Longenecker, 2006; Ekvall, 1996; Frohman, 1998; Nicholson, 1998). Accordingly, the management and decision making structure should be flat and decentralized, with multiple informal networks, to mobilize people, enable direct access resources, as well as to enhance entrepreneurial behaviour to emerge (Ahmet, 1998; Dougherty & Hardy, 1996; Eesley & Longenecker, 2006; Fry, 1987; Haskins & Williams, 1987; Howell & Higgins, 1990a, 1990b; Kanter, 1985; McGinnis & Verney, 1987; Nakata & Sivakumar, 1996; Rodriguez-Pomeda *et al.*, 2003; Stevenson & Gumpert, 1985). This means that authority must be distributed equally and be a matter of facts rather than of hierarchical positions. Creating a true feeling of empowerment, that is, delegating managers’ power and responsibility towards the employees is vital to foster a culture of innovation (Fayolle, 1999; Higgins, 1995a, 1995b; Kanter, 2000; Kotter & Heskett, 1992; Kumpe & Bolwijn, 1994). Especially, the perception that management is supportive is central to a culture that facilitates innovation because managements trust enables people to take risks without fear or undue penalty for failure (Ahmet, 1998; Bitzer, 1991; Chandler *et al.*,

2000; Chisholm, 1987; Cooper & Kleinschmidt, 1995; Fry, 1987; Haskins & Williams, 1987; Hisrich, 1990; Kuratko & Montagno, 1989; Kuratko *et al.*, 1990; Rule & Irwin, 1988; Süßmuth Dyckerhoff, 1995). This helps to signal trust, triggers individual active participation and encourages personal responsibility for outcomes.

Organizational hierarchy, which to a certain extent is necessary in an organization, should not imply that there is too much power distance between higher ups and lower downs on the process and working level. In sum, literature suggests that an intrapreneurship-supportive culture requires low power distance building on flat hierarchies, decentralized power, and egalitarian values in order to foster communication and interaction in all directions and empower employees.

### **3.2 *Uncertainty avoidance (UAI)***

Uncertainty is implicitly inherent in innovation, and especially in radical innovation. The exploitation of new technologies faces huge uncertainties concerning the uses and potential future applications, but it also encourages exploration along a wide variety of alternative paths (Rosenberg, 1996). The way how uncertainty is dealt with (that is, its avoidance or acceptance) has strong implications for the nature of the innovations pursued – exploration versus exploitation, high risk versus low risk, radical versus incremental. Low versus high uncertainty avoidance refers to how upset people get about ambiguity and future doubt. Uncertainty avoiding individuals have a concern of security, and prefer established rules and formalisation/planning of activities in order to reduce risk as well. In contrast, in an uncertainty accepting culture, individuals are more flexible, rules are not necessary, and decision making is pragmatic and situational.

For any organization, survival depends on a culture that promotes investing in risky new technologies and products designed for unfamiliar markets and applications (Bingham, 2003). The process of developing new ideas towards successful products is about discovery, exploration and pursuing new ways; it is a risk-intensive process that requires significant capital outlays and a long time-horizon where predictable resource needs and control over the environment are lacking. Literature suggest that (individual) willingness to accept risk and to face uncertainty is a fundamental element of an innovation-supporting culture (Ahmet, 1998; Bitzer, 1991; Brazeal, 1996; Chisholm, 1987; Czernich, 2003, 2004; Draeger-Ernst, 2003; Duncan *et al.*,

1988; Eesley & Longenecker, 2006; Ekvall, 1996; Fayolle, 2003; Kuratko & Montagno, 1989; Kuratko et al., 1990; Martins & Terblanche, 2003; Mokyr, 1990; Pinchot, 1985; Rothwell & Wissema, 1986; Stevenson & Gumpert, 1985; Thornberry, 2001). This is especially relevant for top executives where control of uncertainty is a major issue (Quinn, 1979; Stevenson & Gumpert, 1985). Without top management's willingness to support highly risky R&D projects, as well as middle management's and the operational level's expertise helping to reduce the perceived risk, large scale innovation can not reach fruition.

Related with risk is failure. Not all new ideas lead to successful innovation in the end; only a minor fraction of new ideas will finally yield sustainable profits (Rosenberg, 1996). Also, the pathways from opportunity to innovation are very much unknown. They still have to be identified and developed by exploration, experimentation, and iteration which, by definition, include mistakes and failure. In an intrapreneurship-supportive culture failures are regarded as opportunities and lessons to learn from, and not as occasions for punishment (Ahmet, 1998; Bitzer, 1991; Bretani & Kleinschmidt, 2004; Chisholm, 1987; Collins & Porras, 1994; Cooper & Kleinschmidt, 1995; Draeger-Ernst, 2003; Eesley & Longenecker, 2006; Frohman, 1998; Fry, 1987; Haskins & Williams, 1987; Higgins, 1995a, 1995b; Hisrich, 1990; Kuratko & Montagno, 1989; Kuratko et al., 1990; Nicholson, 1998; Pinchot, 1985; C. J. Russell & Russell, 1992; R. D. Russell, 1999; Sherwood, 2002; Smith, 1998; Süßmuth Dyckerhoff, 1995). The acceptance of failure is essential when it comes to promoting entrepreneurial behaviour within the organization. In this way, a culture of continuous learning is established. When an idea's end result is not successful, emphasis is placed on what was learned and people do not fear losing their job.

To support this, the emphasis must be on norms and values that reduce rules, structured activities, and routines. This leads to more informality which is crucial for allowing innovators and R&D teams to act without waiting for the normal multilevel approval process (Kumpe & Bolwijn, 1994; Nicholson, 1998; Pinchot & Pellman, 1999). Formal, bureaucratic methods of control associated with organizational structure are ineffective in managing innovative activities given the uncertainties inherent in innovation (Ahmet, 1998; Draeger-Ernst, 2003; Kanter, 1985; R. D. Russell, 1999). Moreover, a culture that is supportive of innovation accepts conflict and competition as stimulating elements to trigger and encourage debate and

divergent thinking, and to voice sensitive issues. Dissent needs to be encouraged because it is an important means to share and discuss opposing viewpoints, express differing opinions, and create a diversity of perspectives (Ekvall, 1996; Frohman, 1998; Kanter, 1985).

Taken together, there is strong agreement that an innovation supporting culture builds on low uncertainty avoidance realized through individual risk-awareness, and tolerance towards failure and less rules and formalization.

### **3.3 Individualism (IND)**

Individualism (in contrast to collectivism) refers to the relationship that individuals have with the society that surrounds them, that is, whether people are rather concerned about themselves or about others (Hofstede, 1980). In individualistic cultures, ties between individuals are loose and self-reliance, autonomy, independence and leadership are considered important. Individualistic people seek to differentiate themselves from others, emphasize personal outcomes over relationships, and value individual needs, interests and goals over those of the group (Triandis, 1995; Trompenaars & Hampden-Turner, 2001). In contrast, collectivistic cultures are characterised by a tight social framework in which people distinguish between their own groups (so-called in-groups) and other groups. The in-group is built and maintained through harmonious relationships, rules of behaviour, membership and loyalty (Hofstede & Hofstede, 2005; Triandis, 1995). Collectivistic people value group interests, goals and outcomes over those of the individual and, as a result, they strive to minimize disruption. They rather pursue cooperative strategies, show more concern about attaining the other party's goals than about attaining their own goals, and are more willing to make sacrifices for their in-group (Lewicki *et al.*, 1994; Triandis, 1995).

It is commonly understood that an intrapreneurship-supportive culture grounds on policies and practices that provide degrees of individual freedom and autonomy to act in order to stimulate initiative and personal responsibility to pursue creative ideas (Ahmet, 1998; Draeger-Ernst, 2003; Easley & Longenecker, 2006; Ekvall, 1996; Fayolle, 2003; Fry, 1987; Haskins & Williams, 1987; Kanter, 1985; Luchsinger & Bagby, 1987; Lumpkin & Dess, 1996; Martins & Terblanche, 2003; McGinnis & Verney, 1987; Morris *et al.*, 1994; Nicholson, 1998; Peters & Waterman, 1982;

Pinchot, 1985; Pinchot & Pellman, 1999; Rodriguez-Pomeda et al., 2003; R. D. Russell, 1999; Salomo *et al.*, 2003a; Schmid, 1987; Ulijn & Weggeman, 2001). Literature stresses the important role that so-called champions or intrapreneurs play in the process of innovation and, in particular, radical innovation; they have to be identified and encouraged to discover opportunities for new business and to carry forward major developments (Bitzer, 1991; Bretani & Kleinschmidt, 2004; Coulson-Thomas, 1999; Fayolle, 2003; Howell & Higgins, 1990a, 1990b; Howell *et al.*, 2005; Maidique, 1980; Pinchot, 1985; Quinn, 1979; Reitz, 1998; Robinson, 2001; Schön, 1963; Shane, 1997; Shane et al., 1995; Souder, 1981b; von Hippel *et al.*, 2000). In order to provide the necessary means to develop innovations, authors postulate slack resources. Indeed, this sounds reasonable, but the problem is that maintaining slack resources costs money, since these resources lie idle and can not be utilized to generate revenues (Cooper & Kleinschmidt, 1995; Draeger-Ernst, 2003; Kanter, 1985; Kuratko & Montagno, 1989; Kuratko et al., 1990; Pinchot, 1985; R. D. Russell, 1999; Schmid, 1987).

These individualism reinforcing characteristics will stimulate people to think, be creative, take initiative, and to show responsibility, which is important for innovation. However, it is questionable whether a purely individualistic culture will make innovation happen; it will also stimulate people to focus too strongly on their personal ambition, tasks, and goals. This will create a sphere of high competition among the employees, which will eventually force people to keep their ideas for themselves instead of sharing them across different departments, groups or disciplines (Eesley & Longenecker, 2006; Ulijn & Weggeman, 2001). For instance, Wagner & Moch (1986) suggest that an overly individualistic corporate culture may be inappropriate for contemporary organizations in which highly interdependent methods are used and processes run. Innovation is such an interrelated process that involves various cross-disciplinarily, iteratively and sequentially linked stages including idea generation, evaluation, development and implementation (Specht et al., 2002; Weule, 2002). Certainly, idea generation can be carried out by individuals – or ideally by groups – the other activities, however, require organizational cooperation. No single individual has the skills, let alone the resources, to take an idea right through to implementation, and even small groups can find this very difficult (Sherwood, 2002). Combining



ideas, exchanging information, and verifying each other's ideas seem to be crucial for innovation.

Evidently, successful innovation also requires collective forces. This means that an intrapreneurship-supportive culture fundamentally needs “we” consciousness, group spirit, sense of belonging, loyalty, obligation to contribute, and strong cohesion between all members of the group or organization (Ekvall, 1996; Frohman, 1998; Kanter, 1985; Kumpe & Bolwijn, 1994; Nakata & Sivakumar, 1996; Robbins, 1998; Shane et al., 1995; Ulijn & Weggeman, 2001). This means that the orientation goes beyond a small number of people or elite but maintaining the group's well-being is considered the best guarantee for the individual. In consequence, employees need to commit themselves to the organization and greater goals that go beyond their self-interest (Ahmet, 1998; Kahn, 1996; Kanter, 1985; Kuratko & Montagno, 1989; Martins & Terblanche, 2003; McGinnis & Verney, 1987; Pinchot, 1985; R. D. Russell, 1999). Especially in today's complex, interdisciplinary innovation processes, in which work activities are increasingly based on collaboration and organised around groups rather than individuals, collaborative methods, such as networks, cross-boundary teams, supply chain partnerships and strategic alliances, are crucial to build a culture of innovation (Kanter, 2000; Ulijn & Weggeman, 2001).

In such settings utilitarian decision making and striving for cooperative strategies is important (Ulijn & Weggeman, 2001). Cooperative strategies require that the decision-makers assess the needs and choices of all stakeholders involved and then commit to an action that is satisfying to a majority (Kotter & Heskett, 1992). This is also supported by Schmeling (2001) who empirically finds that collectivism positively predicts helping behaviours and values. Collectivistic people are more likely to value behaviours that are beneficial to the organization as a whole and are more likely to have a stronger interpersonal orientation on the job in general. People must recognize that helping others to be innovative is part of their job (Frohman, 1998). Successful collectivistic approaches to new product development in the Japanese electronics and automotive industries help to illustrate this point. These approaches, like for instance Quality Function Deployment and Quality Circle programs, are basically well supported, managed by consensus, guided by a broad scope and committed to going the distance (Nakata & Sivakumar, 1996).

We may conclude that in order to build an intrapreneurship-supportive culture, a combination of individualistic and collectivistic orientations is needed (Morris et al., 1993; Morris et al., 1994; Ulijn & Weggeman, 2001). It could be achieved in the way that Kanter (2000) suggests, that leaders should mobilize individual talent in the pursuit of collective goals to make employees responsible for their companies and empowered, but not bounded by their jobs.

### **3.4 Masculinity (MAS)**

Masculinity versus femininity refers to the extent of clarity and distinctiveness of gender roles (Hofstede, 1980). In a masculine culture emphasis is on success and achievement: people live to work, they are goal oriented, show ambition and need to excel. On the contrary, in feminine cultures quality of life and a harmonious, playful atmosphere are important: people work to live, and put emphasis on interdependency and nurturance. Given the results of our literature review, it is rather difficult to provide a clear cut proposition whether an intrapreneurship-supportive culture should be driven by masculine or feminine orientations. There is only little (empirical) work dedicated to the question whether more masculine or more feminine cultures would be supportive of innovation.

On the one hand, there are indications that femininity would be supportive for an intrapreneurship-supportive culture. To foster creativity, idea development and opportunity recognition, an intrapreneurship-supportive culture certainly needs to be based on a playful atmosphere, good relationships, communication and exchange among the participants (Ekvall, 1996; Thwaites, 1992). As innovation is a cooperative effort, it is constraining when people talk behind each other's back or steal each other's ideas. Also, the level of conflict should be low, and personal tension, prestige differences, or power and territory struggles, and gossip should be avoided. Thus, low degrees of masculinity, through a focus on people and the establishment of warm, supportive climates, positively affect the initiation stages of new product development (Nakata & Sivakumar, 1996). Indeed, as Ulijn *et al.* (2001) suggest, the high femininity values of the Netherlands and also Scandinavian countries appear to foster technical innovation in the initial stages of the innovation process.

On the other hand, femininity alone would not make innovation happen; masculinity certainly has a positive effect on intrapreneurship-supportive culture, too. An

intrapreneurship-supportive culture is also built on purposefulness, clear goal setting, and an orientation towards achieving these goals (Barczak & Wilemon, 1992; Bitzer, 1991; Chisholm, 1987; Collins & Porras, 1994; Draeger-Ernst, 2003; Eesley & Longenecker, 2006; Frohman, 1998; Luchsinger & Bagby, 1987; McGinnis & Verney, 1987; Nakata & Sivakumar, 1996; Pinchot & Pellman, 1999; Quinn, 1979; Rodriguez-Pomeda et al., 2003; Stevenson & Gumpert, 1985; Thamhain, 1990). Creativity and the discovery of a business opportunity is one step in innovation, but the other is pursuing the idea towards implementation and market. Addressing clearly identified customer needs and attempting to deliver the best possible solution to the customer has a lot of what can be described as being typically masculine. For successful major innovations, at the outset of innovation projects, a clearly identified need has to be specified both in economic and technological terms. These objectives must be clear to all participants involved because challenging goals stimulate and commit people to look beyond the feasible to the possible.

Goals should not only be formulated in terms of money or technical objectives, but control, motivation, and reward systems must be redesigned to support innovation and intrapreneurial goals (Ahmet, 1998; Anfuso, 1999; Bretani & Kleinschmidt, 2004; Chandler et al., 2000; Duncan et al., 1988; Fry, 1987; Haskins & Williams, 1987; Higgins, 1995b; Hisrich, 1990; Kanter, 1985; Kuratko & Montagno, 1989; Kuratko et al., 1990; Luchsinger & Bagby, 1987; Martins & Terblanche, 2003; McGinnis & Verney, 1987; Nicholson, 1998; Pinchot, 1985; Rule & Irwin, 1988; Schmid, 1987; Sherwood, 2002; Süßmuth Dyckerhoff, 1995). On top of that, Quinn (1979) finds that successful major innovations require a certain admiration for the achiever. In order to maintain high levels of expertise and research discipline, it is necessary to recruit first-rate people, conduct peer reviews of the researchers' performance, and remove non-performers from the projects. Interestingly, some highly innovative countries, such as France, Germany, Japan, and the United States, score high on the masculinity dimension. In general, the cultures of these countries put emphasis on achievement orientation and these countries are among the major innovating nations worldwide, also because of their strength in engineering (Fayolle, 1999; Fayolle et al., 2005; Johnston, 1989; Nakata & Sivakumar, 1996; Nilsson, 2005; Shaw *et al.*, 2003), which basically builds on solution- and target-driven, thus, very masculine approaches. This would be in line with the above postulated low power distance,

which puts emphasis on leadership in innovation. Individuals having a masculine orientation might easier accept and deal with leadership because this is one of their own major concerns.

Given this, we may conclude that an intrapreneurship-supportive culture scores medium on the masculinity dimension based on a combination of both feminine and masculine cultural orientations. The former puts emphasis on people and relationships between people, whereas the latter is concerned with goal, result and task orientation.

### **3.5 Long-term orientation (LTO)**

Long-term versus short-term orientation (also referred to as positive versus negative Confucian dynamism) has great implications for the pursuit of innovative activities. This dimension of culture refers to people's time horizons, attitude to tradition and change as well as preferences of static or dynamic environments (Hofstede & Bond, 1988). Long-term oriented cultures put emphasis on a dynamic, future-oriented mentality, including openness to the new, persistence, and hard work. In contrast, short-term oriented cultures have a concern for rather static environments combined with a focus on the past and the present, on tradition and on keeping within well-known and well-accepted boundaries (Hofstede & Bond, 1988).

Basically, innovation is about change and future. Therefore, an intrapreneurship-supportive culture values longer time horizons (Bingham, 2003; Nakata & Sivakumar, 1996; Quinn, 1979; Ulijn & Weggeman, 2001), especially in the case of major innovations that usually take a long time to develop, to absorb in the market, and to yield profit (Rosenberg, 1996). This includes a future orientation to long-term business objectives (Brazeal, 1996; Fry, 1987; Hisrich, 1990; Pinchot, 1985; Rothwell & Wissema, 1986), as well as a challenging vision and imagination of the future technological and market environment (Bitzer, 1991; Kanter, 1985; Pinchot, 1985; Schmid, 1987) that will be present at the end of the innovation process which can take – depending on the industry – up to five, ten or even fifteen years, such as in the pharmaceutical industry. Innovation starts with the discovery of new, innovative business opportunities. Therefore, all employees should have the opportunities and be supported and encouraged to go into new directions, pursue new ideas as well as to consider and test alternatives. Hence, in an intrapreneurship-supportive culture people are proactive and opportunity-focused (Stevenson & Jarillo, 1990; Thornberry, 2001).

To discover opportunities, open-minded consideration of new information and so-called out-of-the-box thinking are crucial (Bingham, 2003; Cooper & Kleinschmidt, 1995; Eesley & Longenecker, 2006; Ekvall, 1996; Mokyr, 1990; Özsomer *et al.*, 1997; C. J. Russell & Russell, 1992).

Since the exact pathway from opportunity to market is rarely known in its entirety, exploration of alternative, possibly competing approaches and the capacity of building multiple scenarios of the innovation process, the possible outputs and the expected technological and market environments is elementary. People must be willing to “accept many truths” (regarding time and context) and be ready to change in order to be able to take advantage of changes in the technological and market environment (Ahmet, 1998; Bingham, 2003; Damanpour, 1991; Eesley & Longenecker, 2006; Fayolle, 2003; Rothwell & Wissema, 1986; Stevenson & Gumpert, 1985; Ulijn & Weggeman, 2001; Utterback, 1994a, 1994b). A static perspective of technology and market would not be conducive in an environment where new, uncommon ideas and solutions, experimentation and iterative testing are demanded. It is important that people are flexible and quickly adapt to a changing environment (Ahmet, 1998; Cooper & Kleinschmidt, 1995; Draeger-Ernst, 2003; Haskins & Williams, 1987; Kanter, 1985; Martins & Terblanche, 2003; Özsomer *et al.*, 1997; Pinchot, 1985; Rule & Irwin, 1988). Innovation is not only a long, but especially an iterative process including unforeseen delays and setbacks, and probably the more radical the idea the longer the process and the more iterations will occur in the process. Most important in such a context are values like persistence or perseverance to endure the pain, frustration, and effort of overcoming the technical and market obstacles that always confront a new idea and the discipline and willingness to apply many hours toward completing a project (Nakata & Sivakumar, 1996; Peters & Waterman, 1982).

As we can see from the major part of the literature, it is suggested that an intrapreneurship-supportive culture builds on openness towards the new, unknown, exploration, long-term orientation, acceptance of change, and persistence in iterative and long work processes. However, as Kumpe & Bolwijn (1994) state, the right balance between renewal and stability must be kept, which is especially a task of R&D management that needs to keep a tight rope between the short-term demands of business unit leaders, while, at the same time, leaving enough room to work on long-term research. This is in line with Funke & Andonian (2005) who identify the need of

a balanced capital structure that has a long time horizon combined with a short-term, profit-orientation. This allows for courageous and future-oriented management decisions and prevents the company from losing financial robustness. Given this, we may conclude that an intrapreneurship-supportive culture scores medium to high on the long-term orientation dimension.

### **3.6 *Open system orientation (OSO)***

As the literature investigation reveals, the six dimensional framework used by Ulijn & Weggeman (2001) is not fully appropriate to cover intrapreneurship-supportive culture in its entirety. In order to distinguish intrapreneurship-supportive culture, the people's orientation to the inside and/or the outside must be taken into account, too. The so-called system orientation basically refers to the degree to which the organisation and its members monitor and respond to changes in the external environment, as well as the ability to be in exchange-relations with other communities and organizations (Chesbrough, 2003; Robbins, 1998). An open system puts emphasis on issues such as cooperation, networking, sharing of knowledge as well as search and curiosity across the boundaries of the firm. In contrast, a closed system orientated community would rely very much on their internal (re)sources and capabilities; exchange with external groups would be minimized or even avoided.

Indeed, literature suggests that companies, and especially the large ones, need to overcome their natural tendency to focus inward and open up their system to the outside world. This means that initiating, handling and using a portfolio of inter-organizational relationships is highly important for innovation (Bingham, 2003; Chesbrough, 2003; Ritter & Gemünden, 2003; Tushman, 2004). The origin of innovation is the individuals ability discover new, innovative business opportunities (Kirzner, 1997; Klevorick *et al.*, 1995) which are not necessarily to be found within the boundaries of the organization. Discovery can arise from internally focused laboratory research, but also from hunting outside the company for promising ideas and opportunities. In order to discover external sources and resources of innovation, organizational members should continuously monitor and respond to changes in the external environment, such as customers, users, suppliers, venture partners, and place equity investments in small and innovative firms (Chesbrough, 2003; Kanter, 2000; O'Connor & Ayers, 2005; C. J. Russell & Russell, 1992; von Hippel, 2005).

Especially, it is suggested that market orientation – a clear orientation towards the customer and the value added for the customer – is a crucial element of successful innovation (Bitzer, 1991; Draeger-Ernst, 2003; Eesley & Longenecker, 2006; Frishammar & Hörte, 2005; Fry, 1987; Haskins & Williams, 1987; Hisrich, 1990; Kohli & Jaworski, 1990; Martins & Terblanche, 2003; McGinnis & Verney, 1987; Pinchot, 1985; Rice, 2003; Rodriguez-Pomeda et al., 2003; R. D. Russell, 1999; Salomo et al., 2003b; Souder, 1981b). Empirical evidence suggests that market or customer orientation is an antecedent component of innovativeness and, in consequence, to the firm's capacity to innovate, that is, to successfully introduce new products into the market (Atuahene-Gima, 1995; Hurley & Hult, 1998; Salomo et al., 2003b). The impact of this increases with the degree of product innovativeness (Salomo et al., 2003b). Market orientation is not only increasing the direct contact to the market/customer, but also facilitating physical proximity to research, production, and marketing so that future users have a hand in research and development (Quinn, 1979).

Open system orientation does not only refer to the sourcing of innovative ideas and new business opportunities, but also to the way how innovation is financed, created and brought to the market. Funding of innovations should not only come from internal R&D budgets, but also from external sources such as venture capital, angel investors, corporate venture capital entities, private equity, etc. to push R&D to be more inter-organizational (Chesbrough, 2003; Quinn, 1979; Tushman, 2004). Related with this, much of the value in product innovation is increasingly created outside of a particular firm's boundaries. This means that external orientation is not only relevant on the level of knowledge (as resources), but also on the level of human resources – key in innovation. As not all smart people work internally, the company must find and tap into the knowledge and expertise of bright individuals outside the company (Chesbrough, 2003).

Hence, the open organization is recommended for promoting innovativeness, but opening up the processes also involves specific risks. Without concurrent closure of processes to absorb these greater risks, greater openness produces not a further increase but a drop of innovativeness. More specifically, an intrapreneurship-supportive culture builds on the coexistence of internal and external factors of innovation along the whole value chain: funding of innovation, idea generation,

sourcing and sharing of knowledge, joint development, marketing, and distribution. This is what Chesbrough (2003) calls open innovation: it is neither a fully closed nor a fully open system, but the boundaries of the organization are permeable, both from the inside to the outside and the other way around. Thus, we may conclude that an intrapreneurship-supportive culture would score medium on the open system dimension to make best use of both internal and external factors and sources of innovation.

#### **4 Discussion and conclusion**

The objective of this paper was to conduct an extensive literature review in order to identify the state of the art of both research on and application of intrapreneurship-supportive culture, as well as to elaborate a theoretically sound concept of it. Two major streams of literature have been identified. The first provides theoretical but certainly more practice-oriented, qualitative descriptions of intrapreneurship-supportive culture, possible antecedents and seemingly helpful recommendations for application and cultural change. The major shortcoming here is the lack of scientific rigor with regards to conceptualizing/modelling and empirical testing. The second stream centres on the impact that national culture – modelled according to Hofstede (Hofstede, 1980; Hofstede & Bond, 1988) – has on innovation output and performance of companies. These contributions provide empirical testing and validation but lack practice relevant recommendations to shape intrapreneurship-supportive culture on the organizational level.

Taken together, we may assume that the two streams of contributions would be complementary to each other and, given the number and quality of sources studied, describe intrapreneurship-supportive culture quite comprehensively. This calls for synthesizing and integrating the findings into a new, comprehensive conceptualization of intrapreneurship-supportive culture. Departing from Ulijn & Weggeman's (2001) conceptualization of innovation culture, all factors identified throughout this literature investigation have been clustered and converted into a new conceptualization. They could be assigned either to the five dimensions PDI, UAI, IND, MAS, and LTO, or to a new, sixth dimension OSO, or to the seemingly independent constructs creativity, teamwork, and organizational learning. Although this framework seems to cover



intrapreneurship-supportive culture in a quite comprehensive way, a critical reflection is still recommended. Is the framework complete, are any elements missing, or does it include irrelevant elements?

Admittedly, this framework does and can not claim to be complete, but – as the literature review shows – it certainly contains and builds on culture-bound constructs that are relevant for intrapreneurship-supportive culture. Given the number of sources studied, we may assume that the list of factors identified draws a rather complete picture of what intrapreneurship-supportive culture is about. As all identified items could be assigned to one of the conceptualized six dimensions, we may further assume that this is the right direction towards a comprehensive model of intrapreneurship-supportive culture (which, of course, has to be validated empirically). However, what makes us wonder is especially the fact that we also found three groups of factors, which are commonly considered being supportive of innovation, but could not be assigned to one of the six dimensions. Having done some investigations in these directions, we may suggest that creativity, teamwork and organizational learning themselves form constructs that are independent from, antecedent to or the result of an intrapreneurship-supportive culture and themselves based on an intersection of various cultural factors.

Another question to address is whether this framework is an appropriate basis to model and measure intrapreneurship-supportive culture, such as on the group or organizational level? How can we properly operationalize the six dimensions? And measuring it, what would be the best-practice profile of intrapreneurship-supportive culture? Most important, this theory-based conceptualization must be validated empirically. Also, in order to measure intrapreneurship-supportive culture, we have to be clear about what innovation as a dependent variable does precisely mean. Thus, there is a need of correlating the framework to measures that reflect organizational inventiveness, innovativeness, performance, or the like. This also includes what has been addressed earlier by Nakata & Sivakumar (1996), who suggest that intrapreneurship-supportive culture would be different for the early and the later stages of the innovation process. The early phases, often described as the fuzzy front end with long distance to application, require creativity, higher degrees of freedoms, divergent research, and exploration. The later phases centre on exploitation, process efficiency and planning, convergent development, and implementation towards

application. In contrast to this standpoint, Miron *et al.* (2004) find indication that an intrapreneurship-supportive culture would not be competing with a culture that promotes efficiency and quality, both characteristics of the later phases of exploitation and implementation. Also, it is rather difficult to clearly separate the two phases in practice: Where exactly should one make the cut? Is not the transition more or less fluent? In any case, the focus of this contribution is on the early phases to promote intrapreneurship and the development of radical innovation.

Also, questions of relevance and implications for practice must be addressed. We may ask, for instance, whether this kind of culture is relevant for the context of business economics. If yes, does intrapreneurship-supportive culture exist in certain, highly innovative organizations? And, if not, how can we trigger cultural change? Therefore, organizational members must become aware that sustainable innovation and intrapreneurship require a specific culture. Usually, cultural change process require that people recognize that “survival of the community” is at stake (Trompenaars & Hampden-Turner, 2001). Thus, promoting an intrapreneurship-supportive culture must be done in the way that people realize that a certain old way of doing things does not work anymore. Yet, sensitizing people is not enough to facilitate cultural change in the way that it is effectively changing the behaviour of people and other individual and organizational outcomes. The individual intention and willingness to change are prerequisites of change in behaviour. This is because culture is made by interaction of people, confirmed by others, conventionalized and passed on to others or newcomers to learn, and at the same time determining further interaction (Trompenaars & Hampden-Turner, 2001). Thus, given empirical validation of the conceptualization, concrete levers of action must be defined in order to effectively facilitate a change towards an intrapreneurship-supportive culture.

The onion metaphor of culture (see Figure 2-1) helps to visualize how easily or difficultly the change towards an intrapreneurship-supportive culture can be realized. Cultural change is easier as long as the outer layers of culture are addressed. The deeper the cultural layer, the more sustainable anchored a culture and, in consequence, the more difficult to change it. The outer layers of culture are very much a question of organizational culture and relate to what Hofstede *et al.* (1990) label organizational practices. These include, for instance, products and services provided, specific organizational structures implemented, norms defined to guide behaviour and values

claimed to be followed, together still more or less visible expressions of culture, still rather easy to influence and to change. In contrast, the inner layers and in particular the heart of the onion, are individual-based learned and increasingly deeply internalized attitudes, perceptions and basic assumptions. It is rather difficult or often impossible to change them. Thus, promoting change towards an intrapreneurship-supportive culture requires addressing the organizational (NCxCC) and the individual level (NCxPC) of culture simultaneously.

Based on this, several recommendations for further research can be derived. Given the literature-based approach, it is required to empirically test and verify the new conceptualizing of intrapreneurship-supportive culture. Both longitudinal and multidimensional studies are recommended to relate intrapreneurship-supportive culture to organizational innovativeness and performance (Ulijn & Weggeman, 2001). Also, it might be interesting to compare our approach (based on culture) with other empirical studies on factors and determinants of innovation and intrapreneurship (independent from culture). This would be in line with what has been suggested by Damanpour (1991), that new studies should consider different dimensions and variables, such as the individual, organizational and environmental level and include measurement of innovation using not only technical, but also organizational and administrative aspects. Next, given the various contributions which qualitatively describe intrapreneurship-supportive culture and give – often incomplete – advice of how to implement it, this topic has certainly high relevance for business practice. Thus, there is a need to produce practice relevant outcomes and to make efforts in order to better understand how this concept (model?) of intrapreneurship-supportive culture can be linked to some concrete levers of action to effectively shape it on the company level.

**Appendix: Overview of the dimensions and sub-dimensions of intrapreneurship-supportive culture**

PDI	<i>Cross-functional teams</i>	Ahmet, 1998 Anfuso, 1999 Bitzer, 1991 Cooper & Kleinschmidt, 1995 Damanpour, 1991 de Chambreau & Mackenzie, 1986 Ekvall, 1996 Frishammar & Hörte, 2005 Hisrich, 1990 Kahn, 1996 Kanter, 1985 Kumpe & Bolwijn, 1994 Luchsinger & Bagby, 1987 Matins & Terblanche, 2003 McGinnis & Verney 1987 Nicholson, 1998 Ottum & Moore, 1997 Pinchot, 1985 Rice, 2003 Rodruigez-Pomeda et al., 2003 Russel, 1999
	<i>Empowerment</i>	DTT, 2004 Fayolle, 1999 Higgins, 1995a, 1995b Kanter, 2000 Kotter & Heskett, 1992 Kumpe & Bolwijn, 1994
	<i>Flat organizational structures</i>	Ahmet, 1998 Dougherty & Hardy, 1996 Eesley & Longenecker, 2006 Fry, 1987 Haskins & Williams, 1987 Howell & Higgins, 1990a, 1990b Kanter, 1985 McGinnis & Verney, 1987 Nakata & Sivakumar, 1996 Rodriguez-Pomeda et al., 2003 Russel, 1999 Stevenson & Gumpert, 1985 Süssmuth-Dyckerhoff, 1995
	<i>Free, open communication</i>	Ahmet, 1998 Bitzer, 1991 Bretani & Kleinschmidt, 2004 Damanpour, 1991 de Chambreau & Mackenzie, 1986 Draeger-Ernst, 2003 Fry, 1987

		Haskins & Williams, 1987 Hisrich, 1990 Martins & Terblanche, 2003 McDermott, 1999 McGinnis & Verney, 1987 Ottum & Moore, 1997 Russell, 1999
	<i>Top-management support</i>	Ahmet, 1998 Bitzer, 1991 Chandler et al., 2000 Chisholm, 1987 Cooper & Kleinschmidt, 1995 Fry, 1987 Haskins & Williams, 1987 Hisrich, 1990 Kuratko & Montagno, 1989 Kuratko et al., 1990 Rule & Irwin, 1988 Süssmuth Dyckerhoff, 1995
	<i>Trust and confidence</i>	Anfuso, 1999 Bingham, 2003 Bitzer, 1991 Draeger-Ernst, 2003 DTT, 2004 Eesley & Longenecker, 2006 Ekvall, 1996 Fishman, 2000 Frohman, 1998 Fry, 1987 Haskins & Williams 1987 Hisrich, 1990 Kahn, 1996 Russell & Russell, 1992 Sherwood, 2002 Thwaites, 1992 Ulijn & Weggeman, 2001
<b>UAI</b>	<i>Little bureaucracy</i>	Ahmet, 1998 Damanpour, 1996 Dougherty & Hardy, 1996 Draeger-Ernst, 2003 Eesley & Longenecker, 2006 Fry, 1987 Haskins & Williams, 1987 Howell & Higgins, 1990a, 1990b Kanter, 1985 Kuratko & Montagno, 1989 McGinnis & Verney, 1987 Nakata & Sivakumar, 1996 Rodriguez-Pomeda et al., 2003 Stevenson & Gumpert, 1985

	<i>Tolerance for failure</i>	Ahmet, 1998 Bitzer, 1991 Bretani & Kleinschmidt, 2004 Chisholm, 1987 Collins & Porras, 1994 Draeger-Ernst, 2003 Eesley & Longenecker, 2006 Frohman, 1998 Fry, 1987 Haskins & Williams, 1987 Higgins, 1995a, 1995b Hisrich, 1990 Kuratko & Montagno, 1989 Kuratko et al., 1990 Nicholson, 1998 Pinchot, 1985 Russell & Russell, 1992 Russell, 1999 Sherwood, 2002 Smith, 1998 Süssmuth-Dyckerhoff, 1995
	<i>Tolerance for risk</i>	Ahmet, 1998 Bitzer, 1991 Brazeal, 1996 Chisholm, 1987 Czernich, 2003, 2004 Draeger-Ernst, 2003 DTT, 2004 Duncan et al., 1988 Eesley & Longenecker, 2006 Ekvall, 1996 Fayolle, 2003 Kuratko & Montagno, 1989 Kuratko et al., 1990 Martins & Terblanche, 2003 Mokyr, 1990 Pinchot, 1985 Rothwell & Wissema, 1986 Stevenson & Gumpert, 1985 Thornberry, 2001
	<i>Willingness to learn form failure</i>	Bitzer, 1991 Cooper & Kleinschmidt, 1995 Kanter, 1985 Pinchot, 1985
<b>IND</b>	<i>Autonomy</i>	Ahmet, 1998 Draeger-Ernst, 2003 Eesley & Longenecker, 2006 Ekvall, 1996 Fayolle, 2003 Fry, 1987

	<p>Haskins &amp; Williams, 1987  Kanter, 1985  Luchsinger &amp; Bagby, 1987  Lumpkin &amp; Dess, 1996  Martins &amp; Terblanche, 2003  McGinnis &amp; Verney, 1987  Morris et al., 1994  Nicholson, 1998  Peters &amp; Waterman, 1982  Pinchot &amp; Pellman, 1999  Pinchot, 1985  Rodriguez-Pomeda et al., 2003  Russell, 1999  Salomo et al., 2003a  Schmid, 1987  Ulijn &amp; Weggeman, 2001</p>
<i>Availability of resources</i>	<p>Bitzer, 1991  Bretani &amp; Kleinschmidt, 2004  Cooper &amp; Kleinschmidt, 1995  de Chambreau &amp; Mackenzie, 1986  Hisrich, 1990  Kuratko &amp; Montagno, 1989  Kuratko et al., 1990  Pinchot, 1985  Russell, 1999  Schmid, 1987  Süssmuth-Dyckerhoff, 1995</p>
<i>Commitment persistence</i>	<p>Ahmet, 1998  Bitzer, 1991  Chisholm, 1987  Kahn, 1996  Kanter, 1985  Kuratko &amp; Montagno, 1989  Martins &amp; Terblanche, 2003  McGinnis &amp; Verney, 1987  Pinchot, 1985  Rule &amp; Irwin, 1988  Russell, 1999</p>
<i>Organizational slack</i>	<p>Cooper &amp; Kleinschmidt, 1995  Draeger-Ernst, 2003  Duncan et al., 1988  Kanter, 1985  Kuratko &amp; Montagno, 1989  Kuratko et al., 1990  Pinchot, 1985  Russell, 1999  Schmid, 1987</p>
<i>Sponsor/mentor</i>	<p>Bitzer, 1991  Bretani &amp; Kleinschmidt, 2004  Coulson-Thomas, 1999</p>

		<p>de Chambreau &amp; Mackenzie, 1986  Fayolle, 2003  Fry, 1987  Haskins &amp; Williams, 1987  Hisrich, 1990  Howell &amp; Higgins, 1990a, 1990b  Howell et al., 2005  Kanter, 1985  Kuratko et al., 1990  Maidique, 1980  Pinchot, 1985  Quinn, 1979  Reitz, 1998  Robinson, 2001  Rule &amp; Irwin, 1988  Schmid, 1987  Schön, 1963  Shane et al., 1995  Shane, 1997  Souder, 1981b  von Hippel et al., 2000</p>
	<i>Superordinate goals</i>	<p>Ahmet, 1998  Kahn, 1996  Kanter, 1985  Kuratko &amp; Montagno, 1989  Matins &amp; Terblanche, 2003  McGinnis &amp; Verney, 1987  Pinchot, 1985  Russel, 1999</p>
<b>MAS</b>	<i>Appropriate rewards</i>	<p>Ahmet, 1998  Anfuso, 1999  Bitzer, 1991  Bretani &amp; Kleinschmidt, 2004  Chandler et al., 2000  Chisholm 1987  de Chambreau, Mackenzie, 1986  Duncan et al., 1988  Fry, 1987  Haskins &amp; Williams, 1987  Higgins, 1995b  Hisrich, 1990  Kanter, 1985  Kuratko &amp; Montagno, 1989  Kuratko et al., 1990;  Luchsinger &amp; Bagby, 1987  Martins &amp; Terblanche, 2003  McGinnis &amp; Verney, 1987  Nicholson, 1998  Pinchot, 1985  Rule &amp; Irwin, 1988</p>



		Schmid, 1987 Sherwood, 2002 Süssmuth-Dyckerhoff, 1995
	<i>Need to achieve</i>	Barczak & Wilemon, 1992 Bitzer, 1991 Chisholm, 1987 Collins & Porras, 1994 Draeger-Ernst, 2003 DTT, 2004 Eesley & Longenecker, 2006 Frohman, 1998 Luchsinger & Bagby, 1987 McGinnis & Verney, 1987 Nakata & Sivakumar, 1996 Pinchot & Pellman, 1999 Quinn, 1979 Rodriguez-Pomeda et al., 2003 Stevenson & Gumpert, 1985 Thamhain, 1990
<b>LTO</b>	<i>Flexibility</i>	Ahmet, 1998 Bingham, 2003 Cooper & Kleinschmidt, 1995 Damanpour, 1991 Draeger-Ernst, 2003 Eesley & Longenecker, 2006 Fayolle, 2003 Haskins & Williams 1987 Kanter, 1985 Matins & Terblanche, 2003 Özsomer et al., 1997 Pinchot, 1985 Rothwell & Wissema, 1986 Rule & Irwin, 1988 Stevenson & Gumpert, 1985 Ulijn & Weggeman, 2001 Utterback, 1994a, 1994b
	<i>Long-term business objectives</i>	Brazeal, 1996 Fry, 1987 Hisrich, 1990 Pinchot, 1985 Rothwell & Wissema, 1986
	<i>Vision</i>	Bitzer, 1991 Hisrich, 1990 Kanter, 1985 Lynn & Akgün, 2001 McGinnis & Verney, 1987 O'Connor & Veryzer, 2001 Pinchot, 1985 Schmid, 1987
<b>OSO</b>	<i>Customer orientation</i>	Bitzer, 1991

	<p>Eesley &amp; Longenecker, 2006  Fry, 1987  Haskins &amp; Williams, 1987  Kohli &amp; Jaworski, 1990  McGinnis &amp; Verney, 1987  Rice, 2003  Souder, 1981b</p>
<i>Market knowledge</i>	<p>Bitzer, 1991  Chesbrough, 2003  Draeger-Ernst, 2003  Frishammar &amp; Hörte 2005  Fry, 1987  Haskins &amp; Williams, 1987  Hisrich, 1990  Kanter, 2000  Matins &amp; Terblanche, 2003  McGinnis &amp; Verney, 1987  O'Connor &amp; Ayers, 2005  Pinchot, 1985  Rodruigez-Pomeda et al., 2003  Russel, 1999  Russell &amp; Russell, 1992  Schmid, 1987  von Hippel, 2005</p>
<i>Willingness to cross functional boarders</i>	<p>Bingham, 2003;  de Chambreau &amp; Mackenzie, 1986  Eesley &amp; Longenecker, 2006  Ekvall, 1996  Hisrich, 1990  Kuratko &amp; Montagno, 1989  Mokyr, 1990  Pinchot, 1985  Russell &amp; Russell, 1992</p>

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