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**Venturing into the entrepreneurial unknown:  
on entrepreneurship, intrapreneurship and  
extrapreneurship in the high-tech industries**

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**Introduction**

An article published in *Newsweek* in 1999 posed the following intriguing question: *Can Extrapreneurship become a buzzword?*<sup>1</sup> Expectations at the time were high: the related concepts of 'entrepreneurship' (=starting one's own company) and 'intrapreneurship' (=starting up new business activities within a larger company) had already become part and parcel of many management courses and MBA programmes, so why wouldn't 'extrapreneurship' become equally popular? Extrapreneurship is associated above all with starting up a business from an existing (parent) company in the form of an independent *spin-off* (or *sell-off*, in the case of a complete sale), possibly supported and prepared by a strategic investor and/or incubator. These activities could be considered complementary to entrepreneurship and intrapreneurship.

When we try to place the term 'extrapreneurship' and this relatively new practice of bringing together idea, entrepreneur, start-up capital, housing and other locational facilities and supporting services (in other words the creative combinations of entrepreneurs, idea providers, investors and incubators) within the broad and current literature on entrepreneurship, there are a few things that draw our attention. Whereas classic literature on entrepreneurship almost automatically assumes a heroic or clever entrepreneur who, basically because of his/her (pre)disposition (alert and smart, innovative-charismatic) as it were searches and finds market opportunities to exploit. In the case of extrapreneurship it is much more a question of market opportunities waiting to be exploited creatively by (latently) entrepreneurial people, or dynamic entrepreneurs, who are looking restlessly for interesting ideas and inventions

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<sup>1</sup> <http://www.businessweek.com/smallbiz/news/date/9902/e990209.htm>

which they can market at a profit, or investors waiting for the creative genius to show up.

Shane & Venkatamaran (2000: 218) emphasize that what is important with regard to entrepreneurship is a 'nexus' that includes lucrative opportunities and entrepreneurial individuals seizing opportunities. By actively linking the generation of ideas, concepts and products and the spotting and seizing of opportunities 'entrepreneurs' make a positive contribution to the innovativeness, economic activities and dynamics of a country. When studying spin-off and incubation phenomena this definition is eminently important because it separates the idea/opportunity and the entrepreneur at an analytical level: especially when starting up spin-off companies or developing new companies from incubation centres it is not always evident that the entrepreneur and the idea/opportunity go together and are integrated. In this contribution we will further describe and amplify the term 'extrapreneurship', and its sister concepts entrepreneurship and intrapreneurship. A number of theoretical perspectives on corporate venturing, incubation and spin-off creation will be presented, and we will focus especially on the relationship between inventors, entrepreneurs and their parent companies (in the creation of spin-offs) or incubator organizations. Based on three possible forms, to wit corporate venturing, spin-off creation and incubation, and illustrated by cases involving young companies and their parent companies and incubators (e.g. Ordina and The Vision Web, CWI and Eidetica, Twinning and Siennax, and Shell and MTSA), we will further discuss extrapreneurship in the Netherlands and examine in what way it is different from entrepreneurship and intrapreneurship? To sum up, the objectives of this contribution are the following:

- What is extrapreneurship and in what way is it different from entrepreneurship and intrapreneurship?
- How does extrapreneurship manifest itself and which organisational forms of can be distinguished?
- What is the current state of affairs with regard to extrapreneurship in the Netherlands?

## Perspectives on entrepreneurship

In one of the more recent definitions Shane & Venkatamaran (2000: 218) emphasize that what is important with regard to extrapreneurship is a 'nexus' that includes lucrative opportunities and entrepreneurial individuals seizing opportunities: 'the field involves the study of *sources* of opportunities; the *processes* of discovery, evaluation, and exploitation of opportunities; and the set of *individuals* who discover, evaluate, and exploit them.' By actively linking the generation of ideas, concepts and products and the spotting and seizing of opportunities 'entrepreneurs' make a positive contribution to the innovativeness, economic activities and dynamics of a country. When studying spin-off and incubation phenomena this definition is eminently important

because it separates the idea/opportunity and the entrepreneur at an analytical level: especially when starting up spin-off companies or developing new companies from incubation centres it is not always evident that the entrepreneur and the idea/opportunity go together and are integrated.

A parent company's technology can, for instance, be commercialized by an external entrepreneur (actively supported by the parent company). It is also possible that inventors and idea-developers enter into a partnership with an incubator to develop their concepts further and start-up their own company. Within the spin-off process four different roles can be identified: the inventor, the (often internal) entrepreneur, the parent organization and the external investor (in the words of Roberts & Malone (1996): *technology, originator, entrepreneur, source organization & venture investor*). Ideally these four are all actively represented, but it is also quite possible that, for example, the internal entrepreneur or the external investor are absent from the commercialization process. To facilitate a spin-off in such a situation the parent organization will have to persuade external entrepreneurs to take a licence for the developed technology and to work together with the internal inventor(s). If there is a lack of financial means in the initial stages, the parent company will have to look for venture capitalists or itself participate financially in the new product. In the start-up of new businesses supported by incubators similar roles can be identified, the role of entrepreneur/inventor, the incubator as active mentor of the start-up company (for instance by offering housing and coaching), the investment role of the incubator, and the incubator as liaison with professional service providers (specialized law firms, accountants, etc.).

Starting entrepreneurs rarely possess all the skills and tools required to set up a successful business. They are, however, inventive and curious in their search for small and highly uncertain market opportunities that, although they may be new and as yet untested, require relatively little investment (Bhidé, 2000). Rather than being able to fall back on wealthy investors, they have to make do with their own thrift and creativity; often helped financially especially by friends, relatives and former colleagues. Another group of entrepreneurs is supported in the early stages both by former employers and by professional backers with capital, ongoing contracts, references to new customers and suppliers; this reduces their unfamiliarity with the market. Although there are few new enterprises that have access to a stable network and sufficient resources from the start, spin-offs and incubatees put the resources and relationships to which their parent organisation or incubator gives them access to good use.

Nascent and start-up entrepreneurs can be divided into three groups on the basis of the extent to which they use a strategic network in creating and building their company (Elfring & Hulsink, 2005):

- (i) the first category of starting businesses, the so-called *lonesome cowboys*, includes businesses that seem to appear from nowhere

- and that manage to develop without any significant support from a strategic network.
- (ii) the second category, the *spin-offs* or *spin-outs*, consists of starting companies that have received some kind of support from their former employer(s) (for instance training and coaching, housing, contract research, financing, etc.). An example of an organisation that gives birth to new companies on a regular basis is the Centrum voor Wiskunde en Informatica (CWI), which since 1990 has been responsible for about 10 spin-offs, for example Data Distilleries. Universities and large companies can also bring teams of employees together who set up their own company in an attempt to market the technologies on which they are working.
  - (iii) the third category consists of start-ups that receive support from incubators. This type of companies is created and developed within a strategic network of (potential) partners and professional service providers, by a specialised incubator (for instance Biopartner, Philips, European Space Agency, and in the past Twinning). In exchange for a share in the new company these incubators offers starting hi-tech enterprises easy access to a number of important services, like financing, housing, infrastructure and equipment, advice and coaching.

In one of the first articles on extrapreneurship, Johnsson & Hagg (1987) point out that extrapreneurs operate between the hierarchy of entrepreneurship within a large organization (intrapreneurship) on the one hand and entrepreneurship within an anonymous market (traditional entrepreneurship) on the other. In the case of traditional entrepreneurship the entrepreneurs have already started a business; intrapreneurship involves active employees starting up projects and developing new business within the large existing company, either with passive or with active support from top level management; the extrapreneur is an entrepreneur who starts up a commercial activity with strategic partners (the parent company, a committed investor or incubator). The emphasis is on the relationship that exists or existed between the spin-off and the parent company and the relationship between the *incubatee* and the incubator. It is especially the *connection* with the parent company on the one hand and the *partnership* with the incubator that distinguishes spin-offs and incubated companies from regular autonomous start-ups that operate without external support. Extrapreneurship can be seen as a hybrid between hierarchical intrapreneurship and market-oriented entrepreneurship, where the dominant coordination form is the network (Powell, 1990). This kind of 'network-entrepreneurship' is characterized by a strong mutual dependence of the partners involved through a strong mutual trust and open communication and existing or future complementarities between the parent organization and the spin-off company or between the incubator and the *incubatee*.

We can distinguish three processes in which the network of an entrepreneur plays a vital role (Elfring & Hulsink, 2003; Hulsink, Manuel & Stam, 2004):

a) *the ability to discover new opportunities*

Networks in which the entrepreneur more or less actively takes part can be an important source of new ideas and lucrative opportunities. Hills, Lumpkin and Singh (1997) have discovered that about 50 percent of all entrepreneurs obtain new ideas through their networks. In addition, existing knowledge (Shane, 2000) and information (Fiet, 1996) are vital in the process from an idea to its eventual implementation. Both these variables are closely connected to networks, since network relationships can be viewed as ways to gain access to knowledge and information.

b) *the ability to acquire resources*

Entrepreneurs rarely possess all the resources they need to seize an opportunity. One of the crucial tasks of a new entrepreneur is to acquire, mobilize and deploy resources. In the early stages of a new company this is a difficult task due to the limited financial resources and the limited possibilities to generate internal resources and revenue. A close-knit social network (partner, spouse, relatives) can provide the founder/entrepreneur with the resources that are lacking (financial and human capital) and thus offer the company the stability it needs in the first phase of its existence. In addition, frugal networks facilitate the search for suppliers of essential resources (investors, technical partners and crucial customers), that in turn may provide the starting enterprise access to new resources.

c) *the ability to acquire legitimacy*

Acquiring legitimacy is crucially important when starting something that is considered innovative. Start-ups are faced with the *liability of newness* (Stinchcombe, 1965): young companies run a higher risk of failure than companies that have been around longer. Through their (existing or future) networks starting entrepreneurs can succeed in being associated with respected parties (Baum et al., 2000; Stuart et al., 1999). Suchman (1995: 574) defines legitimacy as follows: 'the general perception or assumption that the actions of an entity are desirable, appropriate or just within a social framework of standards, values, convictions and definitions'.

Below we will focus on various aspects of extrapreneurship from four organization-theoretical points of view: the individual or team that starts up the new company (entrepreneurship theories), the parent company or incubators facilitating the new activities (the resource-based view), the division of tasks and complementarity between spin-off and parent company on the one hand and between incubator and the *incubatee* (the resource-dependency theory), and, finally, the quasi-hierarchical supervision as a result of shared ownership, investment relationship and/or other contractual commitments between the parties involved (the principal-agent approach).

*Entrepreneurship theories: the birth of new business*

The dynamics behind corporate venturing, spin-off creation and incubation to a certain extent can be explained through the motives and forces that make people decide to become an entrepreneur. Various authors (Amit et al., 2000; Brandstätter, 1997) argue that personality is an important catalyst of entrepreneurship. They argue that specific character traits can make people want to start up their own company. Comparing starting entrepreneurs and entrepreneurs that take over an existing company, Brandstätter (1997) argues that entrepreneurs starting up their own company have the following character traits: more independent, higher emotional stability, more extravert and open to new ideas and experiences. Emotional stability and independence appear to stimulate the entrepreneur's self-confidence, making him or her try something new and dare to venture. Various studies have shown that 'willingness to take risks', in addition to innovativeness and vision, is a relevant character trait in individuals deciding to set up their own company (Hisrich, 1990; Amit et al., 2000). That does not mean, however, that these entrepreneurial individuals are willing to take more or greater risks than non-entrepreneurial persons. Simon, Houghton & Aquino (1999) point out, for example, that people can start up their own company without being aware of the risks involved. Prejudices with regard to market potential (an overestimation based on small or selective tests) and 'illusion of control' can affect the perceived risks of the future entrepreneur.

Another aspect that is considered an important motivation to start up a new business is the prospect of high financial rewards (Hisrich, 1990; Brockhaus et al., 2001). Other studies conducted among entrepreneurs reveal, however, that independence, innovation, vision and a search for challenges are more important *pull factors* in starting up a new company than financial motives (Roberts, 1991; Amit et al., 2000). In some cases new companies are not started up totally voluntarily but out of virtual necessity in order to be economically successful. In these cases the factors involved are *push factors*. Examples are groups of immigrants using entrepreneurship to try and acquire a position within a society, or people that are not successful working for a company and who see entrepreneurship as a road to independence. *Push factors* within the parent company appear to be conducive to the creation of new companies. A stable working environment will lead to fewer spin-offs than a more unstable one (Roberts, 1991; Hisrich, 1990). A difficult relationship with the employer or the fact that management is not open to new ideas can motivate a person (or group of persons) to start their own company. This is especially true in the case of researchers, who after years of studying a specific subject, consider it a personal insult when their project is rejected (Garvin, 1983). As a result they will have to set up their own company if they wish to continue their work. In other cases the aspiring entrepreneur leaves a knowledge institute as a result of not being allowed to develop applications for an existing technology (Roberts, 1991).

*The resource-based theory: the cooperative parent company and incubator*

In addition to the reasons individuals have for starting up their own business there are other reasons that influence the emergence of specific organizational forms, such as spin-off creation, incubation and corporate venturing. The parent company or incubator have motives of their own for outsourcing specific activities through a spin-off or through the commercialization of a specific set of resources and services. We will identify these motives using the *resource-based* theory (RBT). Strategic motives, such as, for instance, an increased focus on the company's unique skills, will lead the parent company to decide to cooperate in externalization or to concentrate on incubation. Central to RBT are strategies aimed at the exploitation of company-specific resources and expertise (often simply referred to as resources) (Teece, 1998; Quinn, 1992). The assumption is that some companies can be highly profitable, not because they use scare tactics to ward off potential new entrants, but because they face considerably lower costs in comparison to their competitors due to resources that are both unique and hard to copy.

A central theme in RBT is that the resources of companies can lead to lasting competitive advantages. That being the case, why would a company choose to outsource specific resources to commercialize them externally? The strategic outsourcing of specific activities can provide a company with a greater flexibility and allow it to focus more on its core activities (Quinn, 1992). The term *strategic* outsourcing refers to the outsourcing of activities that can be performed better by external parties and thus add more value than by the company outsourcing them. The outsourcing company retains the activities in which it can excel. The outsourcing company can attract the best available contractor for those activities that are not part of its core business and/or in which it cannot excel. The result is a stronger strategic focus, which in turn can be used to expand the company's knowledge and expertise in such a way that it becomes the dominant party in the market segment it has selected. By outsourcing certain non-essential activities the organization is able to reduce bureaucracy and respond faster to market developments. Outsourcing also forces an organization to look for the most cost-effective provider of specific non-core activities. As a result the absolute costs to the company will be reduced.

When a parent company is unable to excel in a specific activity that is not a part of the company's core business, it can help create a spin-off. No matter how promising some business activities may be, to internalize them could lead to value destruction by the parent company spending precious resources like money, talent and time on an activity in which it could not possibly excel. It may be that the company's infrastructure is unable to deal with a specific task, for instance because the activity requires a response time for which the parent company is ill-equipped due to a lack of flexibility. In that case the parent company does not have the necessary competencies to perfect the recently discovered knowledge and technology. The solution may be to outsource the activity in question through the creation of a spin-off (or simply by outsourcing it). This will only happen in cases where the spin-off activity is

not a direct competitor of the 'outsourcing' parent company. In short, the strategic outsourcing of specific activities (preferable to an associated spin-off) can make the company more flexible and allow it to focus more on its core activities.

An incubator, a specialized professional service provider for start-ups and growing companies, is to some extent similar to a parent company, in that the incubator also offers a tailor-made range of services, resources and people to the young company. There are, however, differences as well: whereas the spin-off and the parent company know one another and the spin-off will be up and running in no time, the partnership between the starting entrepreneur (or enterprise) and the incubator has yet to develop. Incubation involves mutual selection processes and negotiations to arrive at a deal. The incubator can support the starting company by offering the portfolio of resources in which the incubator is specialized: housing, seed and/or growth capital, administrative services, management advice, hardware and software, networking, etc.

*Resource dependence theory: the spin-off/parent company and incubator/incubatee partnership*

Pfeffer and Salancik's (1978) *resource dependence* theory looks at the mutual horizontal relationships between actors and argues that an organization will survive when it manages to acquire and maintain sufficient resources. These *resources* can be highly skilled personnel, a unique technology, a specific way of working and organizing, reputation or financial resources. Pfeffer and Salancik argue that organizations are effective when they manage to deal in a positive manner with internal and external stakeholders, on whom they depend with regard to acquiring or exchanging the resources they need. To measure an organization's effectiveness it has to be clear which resources and stakeholders are most important. All organizations are connected to an (external) environment through their relationships with customers, suppliers, competitors, etc. This means that they depend on their environment for acquisition of the resources they require. As a result external parties have a certain level of influence within an organization. As far as the acquisition of resources is concerned, a spin-off or *incubatee* basically has two options. It can either obtain the resources it requires through the parent company or incubator, or it can try to obtain them externally (of course a combination of the two is possible as well).

The dependence of a company on its environment can shift over time. It is especially here that companies are vulnerable (Pfeffer & Salancik, 1978). A changing environment can affect the availability of a given resource. A spin-off, for example, will depend more on the parent company in its start-up phase than in its growth phase, which means that the young company faces a high degree of uncertainty concerning the products it wants to develop and its customers in that critical period. In a next phase the spin-off can detach itself more (or completely) from the parent company and acquire the much-



needed funds, resources and relationships through the broader and more diverse network it has developed over time.

The resource dependence theory argues that companies, including spin-offs, depend on external interest groups for the acquisition of their resources. Without resources a company will not survive. The most likely interest groups for a spin-off or *incubatee* when it comes to acquiring resources (at the outset) are the parent company or the incubator and their social capital in terms of customers, investors and suppliers. This network of parties will be more sympathetic towards the spin-off because of its background and contacts with the parent company. For their resources the spin-off and *incubatee* depend on various (external) parties. These parties have to consider the young companies legitimate before they will provide or exchange resources (Pfeffer & Salancik, 1978). This is achieved, among other things, by the young company's relationship with the parent company. However, in cases where there is a poor strategic fit between the two actors the new company's legitimacy may be adversely affected. By strategic fit is meant that the parent company in one way or another is involved with the spin-off, for example in the role of supplier, offers support in market-related and technological development, or helps in an advisory capacity. A precondition is that there be no conflict of interests between the two and they are not each other's competitors.

New companies spend a great deal of time acquiring the appropriate resources; especially in the early stages it is important for a new company to develop its (technological and marketing-related) competencies with the aim of marketing its products or services as quickly as possible. Any delay has a negative impact on the company's economic performance. A parent company and incubator could to a greater or lesser extent support the spin-off company or *incubatee* by providing it with physical resources such as buildings, money, machinery, equipment and raw materials, even if the support is of a temporary nature. The spin-off or *incubatee* can then focus on developing its competencies and on the market introduction. One resource that is difficult to come by for new companies is financial capital. Venture capitalists and banks pose extremely high demands when considering investing in young technology companies. Often these young companies have little more than an idea or concept, and the vision and best intentions on the part of the entrepreneurs involved to offer as collateral to potential investors. More often than not this makes investing in a new companies a risky affair. A spin-off has the advantage of being able to fall back on the parent company when it comes to the essential financing. Because spin-offs possibly have direct access to the parent company's financial resources and/or find it easier to gain access to other investors through the ties with the parent company, they have access to larger funds and can be more selective in choosing additional investors (Greene et al., 1999). This broader financial basis enables them to build a lasting competitive position, and for example to improve and commercialize their core technology more quickly.

### *The principal-agent theory: quasi-hierarchical supervisory relationships*

The *principal-agent* theory analyses above all the vertical relationships between the principal (the owner or in this case the parent company) and the agent (those who carry out the work on behalf of the principal; in this case the agent is the spin-off) (Jensen & Meckling, 1976; Douma & Schreuder, 1992). The principal-agent theory looks at the (quasi-)hierarchical relationship between the principal, the party that has the authority and takes the decisions, and the agent who in this relationship has no leverage but who does have a technological head start *vis-à-vis* the principal. The central theme of this theory is how in these kinds of situations involving information asymmetry, whereby principal and agent have to work together towards a joint output, can best be given shape; this involves above all the use of monitoring, contracting and financial stimuli. Most business activities require a team effort, and the team of employees, managers and shareholders is as strong as its weakest link (Douma & Schreuder, 1992). When the input of team members is hard or impossible to measure, a *free rider* problem can arise. Individuals can decide to work without dedication or not to work at all. Monitoring the team members (involved in carrying out the work) can in principle prevent unproductive behaviour. A similar information asymmetry occurs between the incubator as the principal and the *incubatee* as the agent: the incubator makes the decisions concerning the investment in a new company, without knowing the exact quality of the entrepreneurial team or the status of their product or service.

In this context the reward and monitoring structure that is construed in complex situations is considered very important to the success of an economic activity. The same can also apply to the spin-off and *incubatee*. The (financial) reward structure for the entrepreneur could be important in ensuring the spin-off's objectives, as well as those of the parent company are realized. As soon as the idea of having an own company has entered the mind of the employee, his motivation to work hard for his employer will greatly diminish. Things are different for the employer: he will want to know if the employee really wants to start his own business and who and what he intends to take with him. This complex situation is characterized by a conflict of interests and information asymmetry. It is important to find an organizational or contractual form that sufficiently takes the motives and possible rewards of both parties into account as well as the information both parties require about each other. In this type of situation a spin-off construction stimulates the employee/entrepreneur to manage the activities in the best possible way, and the parent company to cooperate under certain conditions (for example: financial participation and commissionship, continuous purchase contracts, etc.). The transfer of the parent organization's knowledge to the spin-off, for instance, often takes place in the form of licences. These can be exclusive to ensure the spin-off has sufficient time to exploit the licensed knowledge, or to retrieve investments that have already been made. In this respect there can also be a competition clause to make

sure the parent company and the spin-off will not operate as each other's direct competitors.

### Corporate venturing

Corporate venturing can be described as the strategic activities of large companies aimed at realizing innovative growth through the development of new projects or ventures or by founding (or further develop) new companies outside of the closely knit company structure (Berenschot, 2000; Jacobs & Waalkens, 2001; Rijnders & Elfring, 2001). There is a difference between internal and external venturing: whereas internal ventures fall within the responsibility of top level management, external ventures fall within responsibility of the corporate venture fund's management. Internal corporate venturing of existing companies is aimed at realizing endogenous growth through the stimulation of the entrepreneurial ambition of the employees (product and service development) or by developing opportunities for the company's non-core areas or for redundant employees (outplacement). External corporate venturing involves strategic alliances between large companies and smaller companies or direct investments by large companies in start-ups. Large companies can invest strategically in smaller companies for profit reasons (financial return on investments) and/or a (phased) exogenous influx of innovativeness via a junior partner through access to new ideas, talent, markets and/or technology. Whereas small companies often work together with large companies because of benefits related to financing, reputation, access to distribution and R&D expertise, large companies benefit from the access to new technology/market combinations and/or the exploitation of radical innovations in the longer term, or the acquisition opportunities of the young technology company.

Within large companies there is a fundamental uncertainty about the future success formulas of innovative concepts and companies. At work floor and middle management level of the companies there is, however, a wealth of ideas regarding new products and new business opportunities; if companies fail to provide an outlet for these ideas the more entrepreneurial employees will move on to more inspiring companies or start their own enterprises. A venturing strategy aimed at developing these promising ideas can prove helpful here. A venturing strategy can provide fertile ground for new ideas, allowing entrepreneurial employees to seize opportunities and providing time and resources. In addition to giving those employees (some) autonomy, top level commitment to allow employees to experiment with the development of new ideas and business opportunities is important as well; top level management can, for instance, provide additional facilities (capital, used equipment, contacts, etc.) (Rijnders & Elfring, 2001). Companies can include an explicit innovative objective in their mission statement - for example 25% of the company turnover to be associated with new products - or set up an internal fund for employees with good ideas that are not directly related to the company's core business. Internal entrepreneurship can also be programmed by generating promising ideas and commercial activities at

middle management level and encouraging the work floor. The company will have to set up an adequate package of reward measures for this kind of dynamic employees when the new product or service proves to be commercially successful.

Another way to stimulate innovate entrepreneurship is for companies to set up and exploit an external investment fund – possibly in cooperation with financial partners – aimed at facilitating spin-offs and participating in small innovative companies. In recent years, large companies like Intel, Philips, DSM and Nokia have set up corporate venture funds to be able to develop strategic initiatives at some distance from the parent company. Although the level of autonomy, the mandate and the connection with the parent company vary, these corporate venture funds try to fill the gap between internal corporate ventures and professional venture capital companies in an attempt to combine the two (Rijnders & Elfring, 2001). The focus on certain technologies and markets is derived from internal venturing, whereas the reward structures with shares and options in the new ventures are based on experiences from venture capitalists. In most cases investments will be made both in spin-offs from the parent company and in independent existing and start-up companies. Depending on the core company's priorities these satellite companies can either be sold or, if there is a clear strategic fit, integrated into the core company.

#### **Box 1 Corporate venturing: The Vision Web**

Besides driven by an entrepreneurial spirit, the Vision Web is also inspired by the principles of Ricardo Semler, such as management without control, full internal transparency, cell splitting (when reaching a critical mass of 150-200 people in a unit) and let talent find its place. This Brazilian entrepreneur/management guru had not only become famous with his bestseller *The Maverick* but also with the implementation of some of these principles in his own company Semco: 'letting employees choose what they do, where and when they do it and even how they get paid, and share the profits.' The founders of the Vision Web met in the middle of 1995 at one of Semler's seminars and were full of enthusiasm to set up their new company, a company that would have to be based on a number of pillars, such as 'talent before structures' and 'spontaneous entrepreneurship'. In addition, they believed in an enterprise with a very strong focus on different product-market combinations and what would be a better way to achieve that than through a network organisation? This company specialised in IT architecture was called *Solvision* and it was officially founded on January 1, 1996. Its primary focus was on project management and IT architecture consultancy. At that time the name *The Vision Web* did not yet exist. This 'umbrella' name emerged in 1998 when the second label – *Change Vision* – was launched. Change Vision, which focuses on change management, was the first new company within the Web, and more were to follow. Consequently, they founded an implementation company called *Crexx*. This company makes websites, with a focus on combining e-commerce, content, call centres, websites and telephony. Later, customer demand for more functionality led to the foundation of *The Lodge*, an infrastructure service provider. *FiNext* was set up for the financial market. FiNext serves as parent organisation for the Vision Web's financial activities. An example of this is the joint venture *Intersolutions*.

The starting point is that The Vision Web always maintains a majority interest in its companies and that a shared service centre is responsible for the bookkeeping and legal affairs of all the members of the Vision Web. The Vision Web wants to be the best in stimulating the talents of its employees and in combining talents and market opportunities. The philosophy is straightforward: the financing is arranged internally and the groups of professionals after their investment plan has been endorsed by the management team of Web-bers can take their own steps to increase that amount and run their internal venture by themselves. It was our clear target to develop into an internal and external business network. For us, e-business and a network organisation are more than something electronic. It has to do with leadership structures and how you organise yourself". At the end of 1998, The Vision Web considered going to the stock exchange. Preparations for this were very discouraging and a public offering would have led to many unwelcome changes. In the end, they decided not to go through with it. As a result of these deliberations an Advisory Board of senior executives was set up, which is very important in providing advice and the network to reach customers.

The first five years of The Vision Web were years of unbridled growth. We wanted to grow as fast as we could, in order to create a place in the Dutch market. It was not hard to find good people, although in the first life phases it was hard to convince the employees' environment that it was a good idea for them to leave a renowned company to work for a small start-up like Solvision. In later phases finding people no longer presents a problem. The new employees had to fit in with the company. We never advertised, but just called people we knew. Initially, they were people that one of us knew. After a while the network expands, because the people we hired knew other people. In 1995, we were in a pub, and the first thing we said was: "Wouldn't it be great to have an office just like this, a place where employees can meet, where they come together, exchange knowledge, can invite customers". Employees can also work from home: everyone is provided with a network connection and a laptop computer, which means they can log in anywhere. That doesn't require a big office. Although in terms of "idea" this was not a new thing in the Netherlands, it was in terms of "actually doing it". In March 1997, we went to the Grand Café in Delft. This building has also been important for the reputation of our network organisation, as a place where the Vision Web consultants could meet (as their home base) , but also as a nice location where the Vision Web people could meet with their customers.

After an unbridled growth from 1995 to 2000 growing to a workforce of about 500 employees (with hardly any turnover) and to about 30 labels and boutiques (i.e. internal ventures), the company reached a stabilisation stage and was acquired by the stockmarket-listed IT-services company Ordina at the end of 2003.

### **Spin-off creation**

Increasingly, the universities and public research establishments are considered incubators of future commercial ideas and new business activities. Presently, virtually every university in the Netherlands has its own incubator and/or science and technology park (or is planning to set up one). Universities are also setting up (or expanding) patent and licensing agencies to exploit or manage exclusive knowledge and patents, and they are actively involved in creating temporary entrepreneurial positions for graduates and in

supporting academic spin-offs and providing financial resources, etc. In addition to universities and MTI's, spin-offs also emerge in the private sector, when a certain division or business activity is separated from the parent company. Within this group of entrepreneurial spin-offs the following distinction can be drawn:

- i) *equity carve outs* and spin-outs, resulting from restructuring activities or the desire to commercialize radical innovations (*disruptive technologies*) through an independent division (Anslinger et al., 1997; Christensen, 1997);
- ii) *entrepreneurial* spin-offs, where entrepreneurial employees start a new company to commercialize knowledge they have acquired at the parent company (Roberts & Malone, 1996; Lindholm, 1997; Elfring & Foss, 2000).

Unlike entrepreneurial spin-offs, which are relatively common in the Netherlands, spin-offs from companies listed at the stock exchange are rare. Exceptions to this are Vendex, which separated its employment agency from its retail activities, and KPN, whose PTT Post division now operates independently, and earlier Philips, which externalized ASML. An entrepreneurial spin-off can be defined as follows: *An employee leaving a company to start his own enterprise. To qualify as a genuine spin-off, there has to be an official transfer of rights, such as assets of knowledge, from the existing company to the new enterprise* (Lindholm, 1997: 332). The knowledge being transferred from the parent company to the spin-off can be explicit, for instance in the form of patents or installations, but it can also be implicit in the case of skills and expertise that are difficult to codify (Teece, 1998). Compared to regular start-ups spin-offs develop and present themselves differently. Spin-offs involve experienced and motivated employees with relatively secure positions within an established company leave that company to start their own company. The support that the parent company offers the new enterprise helps reduce the personal risk to the would-be entrepreneur and as a result his chances of success increase.

The transfer of knowledge and technology which has been developed in the parent company to the spin-off often takes place in the form of licences. These can be exclusive in nature to ensure that the spin-off has sufficient time to exploit the knowledge and to earn back the investments it has made. There may be a competition clause to prevent the parent company and the spin-off from competing with each other head on. This makes it easier for a parent company to adopt a favourable attitude towards the spin-off. Elfring and Foss (2000) have drawn attention to the relationship that develops between the parent company and the spin-off: will the spin-off compete with the parent company or not? Elfring and Foss draw a distinction between the *virtuous* spin-off, which is beneficial to the parent company, and a *vicious* spin-off, which has a negative impact as a result of direct competition. In the case of the *virtuous* spin-off the activities of the new company complement the core activities of the parent company, or they are part of the original

company's value chain. In the case of a *vicious* spin-off both the parent company and the spin-off offer the same product-market combination(s) and their relationship is characterized by rivalry.

The importance of knowledge transfer to a spin-off becomes clear in a study conducted by Lindholm (1997). In his study, Lindholm compares *entrepreneurial* spin-offs to regular start-ups with regard to their growth speed and innovative capability over a ten year period. As far as the innovative capability is concerned he found hardly any differences, as both groups had an equal amount of patents. However, the growth witnessed in the spin-offs far exceeded that encountered in the regular start-ups. Lindholm argues that the relationship with the parent company will indirectly influence the growth and performance of a spin-off. Spin-offs are taken seriously much more quickly by external parties such as customers and investors and as a result they have a better chance of being able to acquire (additional) resources. In addition, spin-offs often get (access to) physical resources, patents and/or financial capital from the parent company. The close contacts between a spin-off and its parent company mean that, for example, a spin-off has a developed technology or product at an earlier date and thus is able to expand its activities more quickly. As a result spin-offs are able to market a finished product much sooner than their regular counterparts. They can also free resources more quickly for other activities, such as marketing their products, since they have to spend less time developing their products. Roberts (1991) comes to the same conclusion; he found that 87% of the *entrepreneurial* spin-offs he investigated considered the technology/knowledge they had acquired at the parent company to be important to the start of the spin-off.

Like elsewhere in the world, in the Netherlands new enterprises emerge from other enterprises and knowledge institutes (spin-offs). The reasons for this vary from no longer fitting in the company's strategy, a lack of entrepreneurial spirit on the part of the parent organisation needed to develop and exploit the new opportunity quickly, the high risk involved in the opportunity which may put too much pressure on the revenues of a listed enterprise, making social investments in the context of socially responsible and sustainable entrepreneurship, transferring knowledge to society by government-funded knowledge institutes, stimulating entrepreneurship for politico-economic reasons and thus creating employment by setting up incubators. We present two case studies of parent organisations and start-ups: enterprise Shell and its MTSA spin-off and knowledge institute CWI with Eidetica as one of its spin-offs.

### ***Box 2 spin-off creation: Shell Netherlands and MTSA Technopower***

In 1990, Shell Netherlands created the Shell Participation Association for small Enterprises (SPMO), with the intention of providing an impulse to small-scale businesses by providing venture capital and, where needed, management support. Small companies also have access to Shell's knowledge with regard to (alternative)

energy and the environment. The target group includes innovative and/or technological start-ups. Usually, these are small companies that either run an increased risk due to the position in which they find themselves and/or find it difficult to acquire financial support elsewhere due to a lack of capital.

SPMO is part of the Social Investment programme. This is one of the company's expressions of sustainable entrepreneurship, something Shell has been formulating more explicitly in recent years. Shell supports projects that aim explicitly at groups outside of the company. Supporting entrepreneurship and knowledge transfer is an example. Shell aims especially at supporting companies with new sustainable and innovative products. Wherever possible and when desirable the aim is to acquire financial backing from several parties (syndication). The fund provides companies with seed capital of € 25,000 to € 100,000 in the form of shares or deferred loans. Also, SPMO supervises management buy-outs, like in the case of MTSA Technopower.

MTSA Technopower (originally Multi Technical Services Arnhem) was founded in 1994. At the time it was the technical support division of Billiton Research Arnhem (BRA), a part of the Shell International Research Company (SIRM). BRA was responsible for research and development in the area of metal alloys, corrosion and inspection for Billiton and Shell companies. To that end the support division developed and built process installations and equipment. In 1994, as a result of a further concentration on energy extraction and exploitation, Shell decided to sell BRA to the South-African company Gencor. Because Gencor had its own R&D division, BRA Arnhem was to be closed down. The support division's management saw an opportunity to continue as an independent company developing installations and equipment for the market. Shell responded positively, because this would save the company any negative publicity concerning the closure of BRA. Through autonomous growth and acquisitions MTSA Technopower has grown from 14 to 75 employees. For example, the Technology department of KEMA Nederland was taken over under the name MTSA-KEMA Technopower.

During MTSA's start-up process the company received support from SPMO, which also gave advice during the negotiations with Shell management. During these negotiations and the MTSA's subsequent creation the company has not tried actively to realize a fit between the parent organisation and the spin-off. There was no practical need for this anyway, since MTSA's activities were not a part of Shell's core activities. The entrepreneur has found that MTSA is seen as a serious candidate by potential clients and investors because of its Shell-related background. MTSA did not receive financial capital from SPMO, although it did receive other financial support. In the negotiations with Shell it was agreed that in the first six months Shell would provide 80% of the new company's turnover. In the period following that MTSA would have to generate 80% of its turnover from the market, something it managed to do easily.

During MTSA's start-up phase, SPMO regularly organised meetings where start-ups with a Shell background could get together and exchange information. The MTSA entrepreneur managed to arrange various assignments at these meetings. The employees that had come over from the parent organisation brought in complementary expertise and skills with regard to the development and construction of process installations for the Billiton and Shell companies, which could now be used to develop installations for the market. The transfer of physical resources, in the



form of the BRA plant and its heavy process installations, at a reasonable price, has also contributed to the successful continuation of MTSA.

### ***Box 2b spin-off creation: CWI and Eidetica***

The Centrum voor Wiskunde en Informatica (CWI), formerly known as the Mathematical Centre (MC), was founded in 1946 as a national research institute in the area of mathematics, with an emphasis on applied mathematics. Within the MC, the first Dutch computers were developed and calculation services were carried out for the Dutch industry and insurance community. Computer development was made independent with the help of the Nilmij insurance company. The activities and the staff involved were transferred to a new company called Electrologica. This company can be considered the first of the CWI's spin-offs. In July 2000, the CWI's spin-off policy was formalised, when CWI Inc., the in-house incubator, was founded.

When the CWI was founded the transfer of knowledge to the market was formulated as one of its core activities. Facilitating the creation of spin-offs fits in with this policy. In addition, an active spin-off policy leads to extra – albeit limited – financial revenues that can be used to fund high-risk research. Also, the spin-off policy creates new career opportunities for CWI staff. The ideas and technologies that are designed within the CWI are transferred to the researcher. In exchange for a minority share, CWI Inc. offers limited amounts of seed capital, housing and infrastructure. The actual commercialisation is and stays the responsibility of the entrepreneurial researcher.

Eidetica was founded in 1998 by Annius Groenink and Stijn van Dongen, two of the CWI's former researchers. The direct cause for the start of Eidetica was a specific idea for a product in the two founders' area of expertise: a specific software service that could identify trends within data and text. When it started Eidetica had access to patented autotclassification software that had been developed within the CWI. Initially, Eidetica's ambition was to market the trend-watching software. However, due to a lack of market interest this did not seem feasible. The entrepreneurs then embarked on alternative business activities by developing new technologies and services in cooperation with their clients. Since then Eidetica focuses on software applications for the software manager. The company now provides a hosted knowledge concept involving search methods and text mining solutions. Eidetica provides software as an Application Service Provider (ASP).

The CWI has supported Eidetica in the following ways. In the first year the CWI was responsible for a majority of the new company's turnover. However, Eidetica managed to become financially independent soon after it was founded. After its first year it had to generate most of its business elsewhere. Also, the CWI has made it easier to gain access to the other spin-offs, external financiers and potential clients. One of the entrepreneurs was able to start developing Eidetica's core technology while still working for the CWI. An investigation indicated that the CWI had no rights with regard to Eidetica's technological knowledge. In exchange for the above-mentioned support, the CWI was given a 25% part of Eidetica's initial nominal shares. Through funding, Twinning also took part in the company's share capital. Twinning also provided housing and a network of heavyweights in the area of management and financing. In 2002, Eidetica was taken over by another Twinning enterprise called Filter Cooler Technologies, a company based in Hendrik Ido Ambacht near Rotterdam. The amount involved has not been published. Eidetica

became the R&D division of Filter Cooler Technologies and focuses on advance search technologies, content mining and intelligent ICT solutions.

## Incubation

The American organization for (business) incubators, the National Business Incubation Association (NBIA) uses the following definition of a business incubator: 'an economic development tool designed to accelerate the growth and success of entrepreneurial companies through an array of business support resources and services ([www.nbia.org](http://www.nbia.org)).' According to the NBIA, the effectiveness of incubation is measured on the basis of economic value creation, both for the *incubatee* and the incubator. The concept of business incubation usually includes four types of facilities for start-ups and young (technology) companies: offices, dust-proof spaces and limited laboratories, equipment, etc.; access to financial resources and the investment funds of the incubator and its partners (in the shape of subordinated loans or shares); access to a network of portfolio companies and often a select number of core companies; and, last but not least, advice and coaching with regard to human research management, accounting, legal matters (for instance the company's legal status, intellectual property, etc.). In addition to the basic services of housing and office and research facilities and advice and coaching, incubators also provide facilities aimed at forming a strategic network (new contacts, partners, deal-making , etc.) and reinforcing the young company's mission and focus, as well as its techno-economic and financial potential (drawing up a business plan, financing, sourcing). These services are intended to maximise the chances of success of the young companies (the survival objective), to provide sufficient resources for the new technology company to grow(the development objective) and at the same time to accelerate this growth and expansion into new markets and technologies towards long-lasting success (the acceleration objective) (Hansen, Chesbrough, Nohria & Sull, 2000). The traditional incubator is a knowledge institute (such as a university of R&D institution) where potential entrepreneurs develop ideas for starting up new companies. Initially these knowledge institutes had little or no incubator facilities and as a result there was in many cases a flight of ideas, knowledge and high-quality entrepreneurial talent.

A commercial interpretation of a network-driven incubator is provided by Garage.com and Idealab! (Barrow, 2001; Richards, 2002). Garage.com is a kind of platform aimed at bringing together a select group of starter with ideas and investors with money through the Internet and intranet. When two companies hook up and an investment deal is made, Garage.com receives 5% of the start-ups capital. Garage.com itself makes no strategic investments in small companies, but it earns its participation when it has successfully facilitated the investment by a business angel in a start-up company (as a commission). Another example is Idealab!; here the ideas are provided by the incubator's professional entrepreneurs themselves. With Idealab! the creativity comes from within (concepts and business plans from outside the

company are not accepted): once founder-entrepreneur Bill Gross and his employees have identified an opportunity, a team of 'entrepreneurs' from within and outside the company is put together to translate the idea into a business plan. To develop a prototype for a web service (site) Idealab! provides the venture team with start-up capital and with management support. When the business plan is successfully implemented a company is set up and the capital is divided equally between Idealab! and the team of entrepreneurs. In addition, the start-up team is appointed a senior manager from Idealab! or one of 'its' companies, and it is urgently requested to locate itself on the Idealab! premises. Examples of portfolio-driven incubators are US-based CMGI, Softbank from Japan and Newconomy in the Netherlands. CMGI and Softbank recognized the Internet's potential as early as 1996 and 1997, and in the following years they built up an extensive portfolio of participations in Internet-companies and sought to develop a range of mechanisms to provide companies with access to complementary knowledge and experience. Recently, however, they have developed into builders of strategic networks or keiretsus. They buy existing companies and through their majority interest are in a position to force the various companies in which they have invested to work together and realize synergies. However, as has become clear from recent events involving CMGI, Softbank and Newconomy, these incubators have been insufficiently successful in forging a strategic network of participations into a coherent conglomerate.

#### **Box 4 Incubation: Twinning and Siennax**

A well-known Dutch incubator is Twinning. The rationale behind the development of special facilities and a network for starters within the Twinning concept was the relatively low yield of research efforts and disappointing innovativeness and dynamics, in particular in the Dutch software sector (Ministry of Economic Affairs, 1996, 1997). The Dutch software sector was lagging internationally because it was based on outdated technology and there was an insufficient flow of public knowledge to the market sector. In the mid-90's, Dutch venture capitalists were reluctant to invest in start-up companies (relatively little money was being spent on working out an idea and business plan and on prototyping). Instead, they preferred investing in, especially, American technology companies or in existing companies at home (for instance the restructuring of large companies or management buy-outs) (Booz-Allen & Hamilton, 1998). Not only the venture capitalists, but the Dutch ICT-companies as well, focused predominantly on the short term and they were almost exclusively service-oriented (rather than looking at product development), which resulted in a conservative business climate (Den Hertog & Huizenga, 1997; Ministry of Economic Affairs, 1999a).

Twinnings' origins lie with the increased attention for ICT at a number of government departments in the 1990s. The Software Actionplan, and shortly after the National Action programme Electronic Highway were published in 1996. They were followed by a study by Booz Allen Hamilton into the Dutch ICT sector. The idea to set up Twinning, initially called Twincubators, had by then been born. The incubator Twinning provides special facilities (such as housing, investment funds, access to a high-quality infrastructure) and a support network of mentors, professional service

providers and financiers for starting entrepreneurs in the ICT-sector). First of all, there is the Twinning Network of renowned national and foreign ICT-professionals that can give starters advice concerning the technical and market-related potential of certain ICT-products, establish contacts with suppliers, distributors and clients, and coach the starters from a distance and on essential issues. Secondly, start-ups can rent (office) space at the Twinning Centres at the going rate and gain access to high-quality ICT-facilities and professional services (accountancy, legal services, management consultancy). And thirdly there are the Twinning Funds: the Startfund consists of convertible subordinated loans or shares in young ICT-companies (with a € 200,000 ceiling) and the Growthfund aimed at growing companies based on a 50/50 funding between Twinning and the various participating investors taking part in the fund (with a € 1 million ceiling).

In October 1998, the first Twinning Center is opened in Amsterdam by the then Minister for Economic Affairs. After Amsterdam (Autumn 1998), other Twinning Centers are opened in Eindhoven (Spring 1999), Enschede (Autum 1999 and Delft/Rotterdam (Summer 2000). Twinning has since terminated its operations. From October 2003 onwards, the existing portfolio is managed by Sienna (not to be confused with Siennax) Holdings Europe in Amsterdam.

Siennax was founded in May 1998 by five ex-employees of Origin (the result of the takeover in 1996 of BSO/Origin by Philips C&P). Two of them are (and continue to be) part of the company's board: Herb Prooy (CEO) and Michiel Steltman (CTO). Siennax can also be considered a spin-off of the enterprise Origin, since that is where its founders acquired their knowledge and relationships, albeit much to Origin's dissatisfaction. Initially the idea was to provide consultancy services, in line with Origin, with a focus on the Internet. After a few months the idea of developing a kind of Intranet-like service emerged.

This activity was placed with the second company called Il Campo. The developments of this product are funded in part with the revenues from the consultancy. Two business angels were prepared to provide external funding. In 1999, Prime Technologies Ventures came aboard as lead investor. Twinning also participated. Il Campo was reincorporated into Siennax, and Siennax moved into the Amsterdam Twinning Center, which was considered an inspiring environment. It was also the time of the Internet hype. It helped to be associated with Twinning. Associating with fellow Twinning companies was fun, but beyond that it yielded nothing. Via Twinning, Arthur Anderson was hired, the accountancy cost nothing, the advice was expensive.

Currently, Siennax has 70 employees, offices in the Netherlands (Amstelveen), Germany and the US. Its shareholders are the company's management and staff, Prime Technologies Ventures, ABN AMRO Participaties, Siena, Residex, HGP (Netherlands), BHF Bank (Germany) CapMan Capital Management Oy and Sonera Corporation (Finland).

## Conclusion

Thus far few members of the public at large are familiar with the concept of *extrapreneurship* and the chances of it becoming a buzzword any time soon are slim. But although the overall term used to describe the setting up of

creative combinations of entrepreneurial talent, ideas and knowledge, investments and facilities has not yet managed to achieve popularity, certain elements, like spin-offs, incubators and corporate venturing, have fared decidedly better, both within and outside of the Netherlands. A number of elements can be distinguished. The first one is the individual deciding to go outside the limits imposed by the parent company and set up his or her own business or start from scratch with the support of an incubator. The second, and key, element in the creation of a spin-off or *incubatee* is the parent company or incubator: whether or not either of these support the budding company (and the degree to which they do so) and what added value they bring to the start-up. The third element is related to the exchange taking place between the spin-off or *incubatee* on the one hand and the parent company or incubator on the other and the form in which that exchange takes place. The fourth element has to do with the relationship between the spin-off or *incubatee* on the one hand and the parent company or incubator on the other and the degree to which the parent or incubator on the one hand monitor the spin-off or *incubatee's* activities, and on the other hand provide the new company with various resources, facilities and relationships.

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