Creativity (Ideas) Management in Industrial R&D Organizations: A Crea-Political Process Model and an Empirical Illustration of Corus RD&T

Han Bakker, Kees Boersma and Sytse Oreel

Creativity management is a crucial topic to consider in the debate about the innovative research department. Against the background of discussions about individual creativity and organizational commitment, this article argues that the creative process in organizations is a matter of political strategies. The ideator literally has to sell his/her idea. The article therefore comes up with a crea-political process model in which there is ample room for the thought that ideas emerge and survive within a social-political context. In addition, the crea-political process model is used to analyse the way in which the Corus Group Research Development and Technology (RD&T) department has implemented an electronic idea-management system. The system, called *eureka!*, has been designed as a straightforward platform to capture, review, evaluate and select creative ideas. The findings challenge the literature on idea management in organizations to consider the political activities of ideators in the whole process of creativity.

Introduction

Most industrial R&D managers emphasize the necessity of an innovative environment in which creativity can prosper. While innovation in this respect is not a random process, R&D managers often argue that this process of knowledge creation is hard to manage (Argyres & Silverman, 2004; Tell, 2004; Thamhain, 2003; Verhaeghe & Kfir, 2002). More precisely, R&D managers struggle with questions of individual freedom in research and organizational commitment (Van Dijk & Van den Ende, 2002) and with matters of individual flexibility (Georgdottir & Getz, 2004). Given local circumstances (such as the nature, size and market-context of the firm) they have to find a balance between the scientific ambitions of professionals (the key actors within this process) and organizational goals such as product development.

In a more usual sense the question of individual freedom and organizational demands can be problematized as the connection between the actor (agent) and structure, which has been a important issue in social research since decades (e.g. Bourdieu, 1992; Giddens, 1984). Over recent years this problem has received increasing attention within the field of organization and management studies (see, for example, Orlikowski, 2000). What is important for the present article in this respect is the notion that the R&D organization can profit from knowledge creation only if the individual action and knowledge (idea) generation is embedded in organizational routines and local research agendas, as previous empirical research has shown (Berends, Boersma & Weggeman, 2003; Saari & Miettinen, 2001). Strategic and active knowledge management that can influence the innovative and creative capacity of the firm is therefore a crucial topic to consider.

Recent research in organization management studies has shown the relevance of information systems (e.g. intranets) to steer creativity knowledge/ideas exchange among members of the organization (Curry & Stancich, 2000; Damsgaard & Scheepers, 2001). Information systems can become a leading tool in shaping a community of practice in the firm, which enables practitioners to share knowledge and to create a link between learning and performance (Wenger, 1998; Wenger,

doi:10.1111/j.1467-8691.2006.00397.x

McDermott & Snyder, 2002). Such a community is formed by people who engage in a process of collective learning in a shared domain of human endeavour such as the R&D organization. For a community of practice to function it needs to generate and appropriate a shared repertoire of ideas and creativity. ICT (in the sense of an electronic idea system) can be seen as an important tool in this respect. As we will see in this article, such a tool is not neutral, but as a mediator – and because of its specific technical script (Akrich, 1992) – it also partly shapes the creative idea.

In this article we will address this problem, by focusing on creativity management within the Research, Development & Technology (RD&T) department of the Corus Group (an international metals company).[1] The idea is not, however, to study the Corus RD&T knowledge management in detail, since this embraces more than just creativity management. In the following, we want to limit ourselves to the question of how, in the context of Corus RD&T's creativity management, individual researchers come up with creative ideas using an ICT-tool, and how these ideas are judged by their peers and management. In this respect, we see a creative idea as a new and adequate contribution (see Henry, 2005) in the specific context of Corus RD&T. The ideator then, is the person who comes up with a new idea.

In contrast to static models, we study the creative idea management as a process, which:

> . . . focuses our inquiry on how individuals attempt to orient themselves to, and make creative action in, situations or events that are complex, ambiguous, and ill defined. In other words, this is an issue of how individuals engage in sensemaking in organizations. (Drazin, Glynn and Kazanjian, 1999, p. 287)

Therefore, we will come up with a model for creativity management through which we can understand this process of sensemaking.

The objective of this article is twofold. First, following previous (theoretical) research, we want to show how the process of creativity can be managed (and modelled) within organizational R&D practices. In this part we will reflect upon the question of individual creative action versus organizational rules. Second, we want to study the development, implementation and adaptation of an idea management system within the context of the Corus RD&T department. In this empirical part of the article, we will unravel how *eureka!*, an intranet tool based upon Lotus Notes, is embedded into the creativity (ideas) management (as part of the knowledge management) at Corus RD&T. The main question is how we can understand *eureka!* in the process of creativity management at Corus RD&T and how the researchers are actually using this system. We will study the implications for the researchers working with the program. We are interested in how this system affects the generation and evaluation of ideas within Corus – how was *eureka!* defined and how is it used by researchers to get support for their ideas?

In what follows, we first will give a brief overview of the literature on creativity management analysing two different models of creativity management. We will present a new research model with which we will analyse creativity management as a crea-political activity. Next, we will use this model to sketch the context of Corus RD&T management and its motivation to implement *eureka!*. In doing so, we will analyse the process of sensemaking within Corus RD&T. In the conclusion of this article we will discuss the value of our creativity management model and reflect upon the use of *eureka!* at Corus in the light of this model.

Models of Creativity Management and R&D

Over the years, scholars have come up with different theories about creativity, the management of creativity, and its relation to knowledge generation within (R&D) organizations. In this section, we will present two leading models from the field of management of creativity that have been recently published in international journals: (a) the model of Van Dijk and Van den Ende (2002) and (b) the model of Hellström and Hellström (2002). Both models address the connection of the individual actor and organization we have raised in the introduction of this article and are therefore interesting for us in understanding the process of creativity management in R&D settings. We will discuss the background of each model separately, taking the theoretical starting points into consideration before coming up with an alternative model.

In the early 1980s Theresa Amabile stressed the importance of creativity among school children. Because of her background as a psychologist, she opted for an individual, cogni-

[1] We would like to thank the Innovation Manager and the Manager Communication and Publicity of the Corus RD&T for their co-operation, providing the information about Corus in this article and for their useful suggestions and comments on earlier drafts.

tive approach in analysing creative processes. Later on, while working at Harvard, she also paid attention to the urgency of creativity management for the innovativeness of organizations and leadership (Amabile, 1998).

Many authors in the field of creativity management have been inspired by Amabile's ideas of intrinsic motivation. The Creativity Transformation model by Van Dijk and Van den Ende, published in *R&D Management* (2002), is an important example. It can be interpreted as a reaction to the rather naïve idea of the uni-lateral relationship between cultural and structural elements. In the model, shown in Figure 1 below, the cultural and structural aspects are two overlapping domains of the organization. The theoretical perspective of this model is based upon individually related factors and organizationally related factors (e.g. Tropman, 1998). Van Dijk and Van den Ende's model suggests mutual influence of both factors and elements, with the main focus on the organizational part (2002, p. 388). The authors have developed a so-called three-step model, distinguishing between 'idea extraction', 'idea landing' and 'idea follow-up' (Van Dijk and Van den Ende, 2002, p. 390).

This model is practical and the distinguished variables are recognizable in organizational contexts. As we can see, Van Dijk and Van den Ende stress the mutual relation between cultural and structural factors and the multilaterality of the process. The focus seems to be on the manager (considering terms such as idea extraction).

Likewise, in a critical reaction on the unilateral flow of ideas in organizations, Hellström and Hellström introduced a management of creativity process model. The title of their article: 'Highways, Alleys and By-lanes: Charting the Pathways for Ideas and Innovations in Organizations' is indicative of their opinion that it is impossible to regard idea processes as unilateral. Based upon an in-depth interview study with 34 members of a large Swedish telecoms corporation, the authors tried to find out how creativity is facilitated in organizations. The main question of this study was 'how stimulation of new ideas comes about and what pathways they take through the organization' (2002, p. 107).

The authors have labelled the process as *organizational ideation*. They combined the individual/team orientation (e.g. Leonard-Barton, 1992) and the concept of the knowledge broker (Prusak & Cohen, 1998) on the one hand and the organizational structure orientation (e.g. Hitt, Ireland & Lee, 2000; Kogut & Zander, 1996) on the other hand to study the involved agency and the pathways of organizational ideation. The process of 'organizational ideation' is sub-divided into four factors: idea inducement, the pathways, the rules of the road and 'gate control' (Hellström & Hellström, 2002), as is shown in the Figure 2. This model is interesting because it shifts the attention to structures that include ambiguity and informal management, which are assets in the unpredictable processes of organizational ideation. Words such as 'highways', 'alleys', 'by-lanes', 'pathways', 'rules of the road' and 'gate control' clearly indicate that these authors have found their inspiration in the modern traffic situation.

In the two models presented above, the authors also interpret the role of the man-

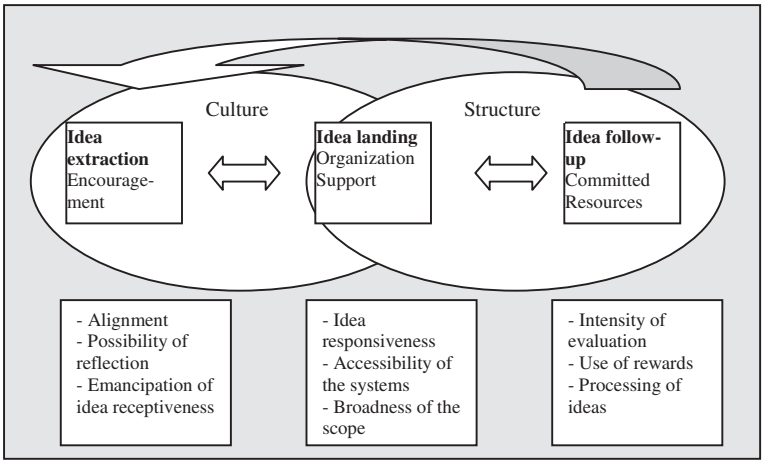

Figure 1. Phases and Factors in the Transfer of Creativity to Practicable Ideas
Source: Van Dijk & Van den Ende, 2002.

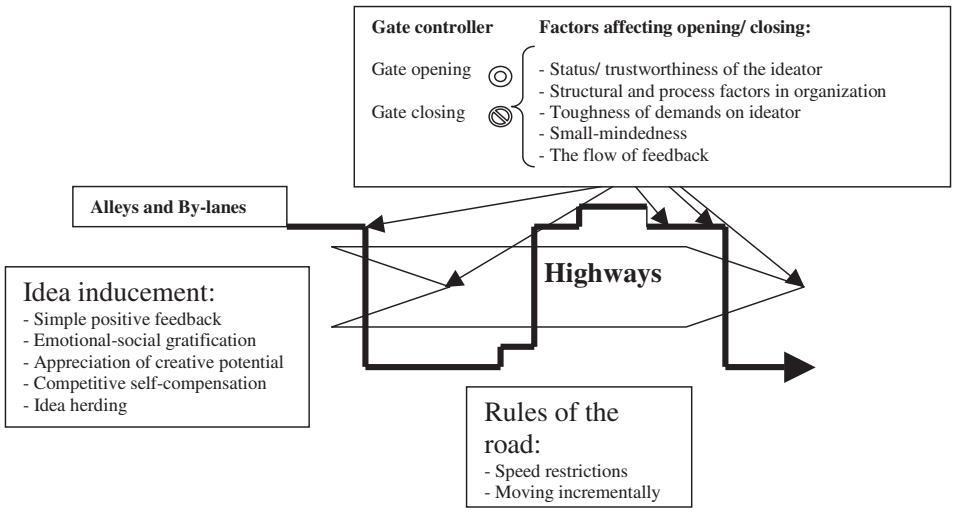

Figure 2. A Model of Organizational Ideation
Source: Hellström & Hellström, 2002.

ager in the whole process of creativity. In the first model, Van Dijk and Van den Ende, the focus is on the manager, who is presented as an industrial entrepreneur, whereas in the second, that of Hellström and Hellström, there is more space for both the employee and the manager, the manager being a road builder, rule-maker and gate-controller, whereas the employee is looking for the best routes. It is a way to focus upon the managerial aspect of the organizational-creativity process.

However, what is missing in these two models is an indication of how the manager can deal with the tension between creativity as expression on the one hand and creativity as purposeful action on the other hand. Many ideas that arise in an organizational context are hardly free from interpretations, expectations and other experiences that *ideators* have developed in their working life – these are the people, operating within different organizational cultural contexts, who give meaning to the ideas (Drazin, Glynn & Kazanjian, 1999; Weick, 1995). Their cognitive filters, or frames as Goffman would call them, enable but also can easily limit their creative expressions and hence the organization's potential creative reservoir. Instead of 'black-boxing' the organizational culture (as Van Dijk and Van den Ende do in their model in which culture is assumed to be an organization-wide, shared phenomenon that is manageable to a considerable extent), we see culture as part and parcel of the entire organization, affecting all kinds of actions and relations (Alvesson, 2002), especially political actions, as we will see below. For that reason, culture in our model is not added as a separate variable.

Ideas are complex wholes of interrelated elements that form part of larger wholes. Idea evolution is strongly shaped (and judged) by the organizational context; in the end not all ideas are equal. In order to understand this phenomenon, we will introduce the *political* metaphor to study the creativity process in organizations. We no longer perceive this as a creative activity *per se* but merely as a 'creapolitical' process. It is a matter of liminality (Turner, 1967); an inter-structural situation that occurs when people exist outside the classificatory schemes (in our case political and creativity) of daily organizational practices.

A New Research Model

While studying the wide range of literature it becomes clear that creativity has long been claimed by psychologists. At present it is obvious that creativity can no longer be seen as a characteristic of an individual alone. Creativity is not only the result of the genius of a person; it always takes place within a specific context (Feldman, Csikszentmihalyi & Gardner, 1994). Gardner (1994, p. 71) states that people are never creative in general. Creativity is always related to so-called domains of which a person has a certain amount of knowledge. Apart from that, nothing and nobody is creative in essence, it is always about the judgements of others. This view is also pre-

sented by Amabile (1983, p. 32), who states that creativity is a subjective notion and that it is impossible to see creativity as a dichotomy. It is better to say that someone or something is more or less creative compared to somebody or something else.

According to us, the management of creative expression within an organization is a matter of *political strategies*. Actors not only have to come up with innovative ideas based upon research in the research department (or elsewhere), but they have to 'sell' these ideas to their colleagues, peers and managers. In the end, this is a difficult process of justification (Latour & Woolgar, 1986; Tell, 2004) in which the ideators have to translate their ideas from the individual level to the level of the R&D department. Bringing up ideas is a matter of concern rather than a matter of fact, and these matters must be liked, justified and do-able (Latour, 1987). Next, on the level of the R&D department, the ideas of the ideators are being re-interpreted by organization actors such as the R&D manager. This is not a uni-linear cognitive process, but an activity that needs a careful political strategy of shaping coalitions within the organization. It is during such organizational processes that actors develop all kinds of power strategies in order to influence their organizational environments (Hardy & Clegg, 1999). In this respect, power not only has to do with the individual ability to 'get things done', to influence decision outcomes, but, as Swan and Scarbrough argued in a recent article in which they refer to the work of Steve Lukes, also with more 'hidden' forms of power that involve (de)legitimation of particular activities (Swan & Scarbrough, 2005). (See also the ideas of Cross & Parker, 2004, about (the) hidden power in organizational networks).

This is not to say that we want to overemphasize politics and political processes. For example, it is important to consider the socio-cognitive processes in which individual ideas are transformed into collective practices. This is another process that includes both the micro level of the individual cognition and the organizational routines, i.e. shared cognition (Garud & Rappa, 1994). Moreover, under equal circumstances some people come up with more creative ideas than others and show more creative behaviour than others. In this article, however, we want to focus on the idea that organizational members often search for information and support haphazardly and opportunistically because of the existence of cognitive limits (this point has been discussed earlier in terms of bounded rationality, see Eisenhardt & Zbaracki, 1992). It is this focus that justifies the presentation of a creativity management model in which there is room for the political part of the creative process.

A Crea-Political Process Model

There is a thin blue line between where mental aggregates become expressed or evolve from the ideators' perspective and where they evolve from other organizational actors' perspective (see Simonton, 1988). There are good reasons to analyse this as a continuum, from the creative process at one extreme to the political process at the other, because at any time during the process the ideator shows both creative and (intentional or unintentional) political behaviour.

However, we want to distinguish three separate phases or modalities in this continuum: the creative process, the crea-political process and the political process, because we want to focus on the process in which the creative and political dynamics become interlinked – this happens particularly and foremost in what we call the crea-political phase. In this phase, the new knowledge representations (as an outcome of this process of sensemaking) come into play at both the individual and the collective level, '. . . while new objectives concerning knowledge accumulation and knowledge preservation enter the organizational level' (Lazaric, Mangolte & Massué, 2003).

The model must be seen as an *action model* in which the individual political strategies are incorporated. Part of this process can be understood by using the models of Van Dijk and Van den Ende (Figure 1) and Hellström and Hellström (Figure 2). In our model, however, we focus more on the political strategies of the ideator and R&D manager. The way in which individual researchers operate within the crea-political phase is visualized in Figure 3 below. Of course, as in all other models, the figure is a simplification of reality (for example, the different phases and circles in the model are overlapping in daily practice), but one that can help us to understand in a more systematic way – in the Weberian *ideal-typical* sense – how in the crea-political phase the individual and organizational levels are interconnected.

Rationale Behind the Model

The idea behind this model is twofold. In the first place, the model fills the gap we have discovered in the literature – the idea that creativity and the activities of the ideator can be seen as a crea-political process. The model can best

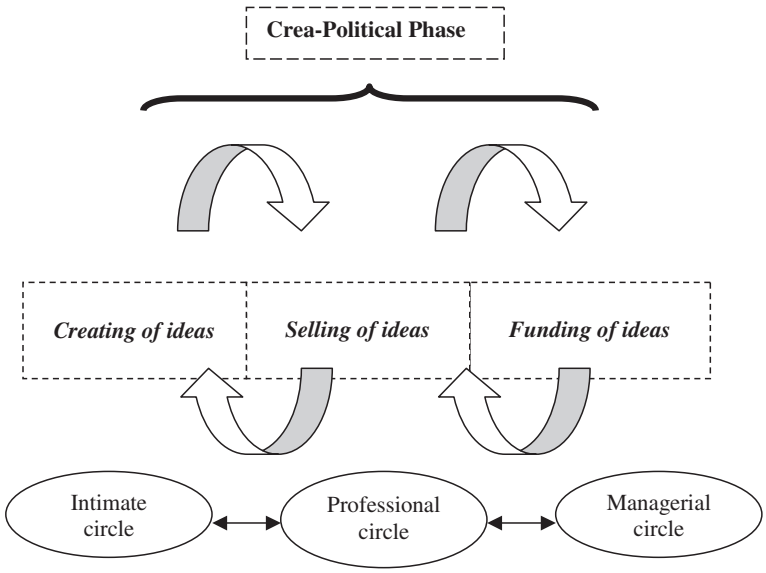

Figure 3. The Crea-Political Process Model

be seen as a sensitizing model for cases in which one tries to understand how a creative individual uses political strategies to get his/her idea funded in the organization. In the second place the model gives a structure to our empirical findings – the use of a creativity knowledge system at Corus RD&T – that we will present in the sections below. In other words, with the model we try to bridge the gap between abstract theory and the practice of organizing creativity.

This figure must be read as follows. It first of all describes the various (bureaucratic) organizational circles in which the ideator operates and in which the political strategies take place. Because an idea never comes up in isolation (i.e. ideas are always embedded in local circumstances), we start with the intimate circle in which the ideator tries to convince a few trustworthy researchers (inside or outside the organization) or even lay people about the usefulness of an idea. In the professional circle the idea is tested against a group of knowledgeable others, for example in a peer review process or by end-users of the idea (in the case of Corus RD&T, these people are mainly working in the business units, i.e. the production and not the research site of the company). In the managerial circle the ideator tries to get the commitment of the management to develop his/her idea into a workable research plan. In this way, an idea becomes 'do-able' (a term borrowed from Fujimura, 1987) within a specific organizational context. This part of the model describes the *travelling of ideas* through (local) organizational contexts during which the ideas are transformed in various phases of the creative process (see also Czarniawska & Joerges, 1996).[2]

Parallel to this are the actions of the individual researcher, which are divided into *the creating*, *selling and funding of ideas*. This process describes the route of an idea from the individual's mind to the organizational practice (knowledge routines). It is especially in the *selling of ideas* phase that the individual researcher has to find support for his or her idea. This is an entrepreneurial activity that has been labelled before as internal corporate venturing, which takes place at different levels of the organization (Burgelman, 1983; Garud & Van de Ven, 1992). It indicates how situated individuals try to persuade influential others at the level of the corporation.

Of course, these processes do not follow a unidirectional route, in the sense that an idea simply runs from an individual towards an organization-wide realm. For that reason, we have used feedback arrows (pointing to the left in the figure) in our model, which stand for the interactions between the different phases in the whole crea-political process.

[2] While travelling, the ideas undergo a constant process of translation giving then different meanings as a result of changing contexts. It is outside the scope of this article to describe the epistemological implications of this process (i.e. like Latour and Woolgar did in *Laboratory Life*, 1986). Instead, we want to focus more on the social interactions and strategies of Corus (research) employees.

The Crea-Political Process Model and the Use of ICT-Systems as a Tool

Traditionally, classical creativity systems such as suggestion boxes are being used as a co-ordinating tool in managing creativity (Ekvall, 1971). Such systems have been followed more recently followed by more advanced knowledge management systems, that is, by electronic spaces such as intranets (and in the example case, *eureka!*) in which ideas can be captured, enhanced and selected. These systems can function as management tools after the early stages of the innovation process (the fuzzy front end, see: Boeddrich, 2004).

Ideally, the R&D information system will create an electronic infrastructure and knowledge pool, thus becoming part of the creativity management process. In our model, it plays a vital role in the whole crea-political process. While using information and communication technologies (ICT) in R&D environments, such as intranet platforms and other knowledge management systems, the researchers produce and reproduce their social relations and communication patterns within the research setting (Orlikowski, 2000, in a study about the implementation of Lotus Notes in different organizational settings). As said before in the introduction, the Lotus Notes intranet tool *eureka!* plays an important role in our empirical study of the process of managing creativity within Corus RD&T.

Although this was not the first motivation for the Corus R&D management to start with *eureka!*, the use of the program can lead to an environment where creativity can prosper. The use of the system implies that the management must have the skills and competence to select the appropriate explicit knowledge and the ability to 'translate' this knowledge into organizational terms. After all, the creativity is not in the computer system *eureka!* but within human beings. Earlier empirical research has shown that the implementation and use of an ICT tool is a complicated process of sensemaking (Boersma & Kingma, 2005). The knowledge system (as a tool for idea management) can only *facilitate* the capturing, selection and enhancing of ideas among members of the organization. The starting point is that the knowledge (ideas) put on the knowledge system is explicit knowledge – in the terms of Michael Polanyi – that can easily be shared and evaluated by members of the user group. For this reason, Curry and Stancich (2000) state that 'To obtain maximum value from an intranet, both the "soft" cultural issues of information sharing and change in work processes must be addressed alongside the "hard" systems issues of managing the Intranet as an information system and a business recourse' (Curry & Stancich, 2000, p. 255).

Research Methods

In what follows we want to present our empirical case study into the idea management system of Corus RD&T. Our research into the Corus *eureka!* system is based upon a survey, interviews and secondary data that describe the initiation, development, operation and local impact of this knowledge management system.

The survey consisted of questions about the ideator (his/her motives, reputation, network), the screening of ideas and the role of the management and the funding-process. The questionnaire was sent by mail to about 850 people; 550 of whom were researchers. We got a response of 173, which is about 33 per cent of the population; see the table in Appendix 1 below. In our research, the survey functions as a first step in the analysis and should not be seen as an attempt to figure out causal relationships between certain research variables. The outcome of the questionnaire will be used as a quantitative illustration of the way *eureka!* is judged by different researchers and managers of Corus RD&T (see Appendix 2). We have used the outcome of the survey to develop relevant topics that we used during our interviews.

We conducted in-depth interview sessions with eight researchers who had experience with *eureka!*. The interviews we carried out at two Corus RD&T sites (one in The Netherlands and one in the UK) were semi-structured. We analysed the interviews in terms of technology management, organizational culture, communication processes and power relations. We paid special attention to communication patterns and working routines and the way *eureka!* was used by individual researchers. The collected data are related to the process of R&D knowledge creation. In addition, we have consulted some *eureka!* key personnel, such as the Programme Manager Innovation who set up the system, in order to understand the managerial problems and dilemmas.

In addition to the interviews and the survey, we obtained access to relevant documents such as the '*eureka!* Ideas Management System User Manual Lotus Notes' to reconstruct the (technical) script of *eureka!* (see also Figure 4).

The data we gathered were analysed in terms of (a) the social behaviour of the ideator, (b) the role of the evaluator during the selection process and (c) the lobby-activities

that surround the funding process. In what follows, we will black-box both the cognitive, inter-personal activity and the organizational implementation process after the funding. We will focus on the question 'what happens in between'; in the crea-political phase.

Ideas Management at Corus RD&T

The Use of Eureka!

Corus Group is an international metals company, formed on 6 October 1999, through the merger of British Steel (UK) and Koninklijke Hoogovens (The Netherlands). The headquarters are situated in London, with four divisions and operations worldwide. Corus presents itself as a customer-focused, innovative solutions-driven company, which manufactures, processes and distributes metal products (www.corusgroup.com – April/May 2005). The company has manufacturing operations in many countries, with major plants in the UK, The Netherlands, Germany, France, Norway and the USA, and also provides design, technology and consultancy services. Corus is divided into four main Divisions – strip products, long products, distributions & building systems and aluminium – each of them contains several business units (22 in total). Some business units have idea management systems and pools of their own (separate from RD&T), but a discussion of these systems is beyond the scope of this article.

Corus has a research department at which about 900 people are working; about 500 in The Netherlands and 400 in the UK. Corus RD&T plays an important and strategic role in the entire process of innovation at Corus.

Recently, the Corus RD&T management introduced a new idea management system, *eureka!*, to handle creative ideas. *Eureka!* was introduced with a promising rhetoric statement: 'We have to generate a continuous stream of market winners by developing new processes, products, product applications and new business concepts. The start will be building up our portfolio of Ideas' (*eureka!* User Manual, p. 2). It is part of the Corus intranet. Figure 4 (below) shows us the formal route of an idea throughout the *eureka!* system.

In 2004 about 250 ideas were put in *eureka!*, 20 per cent of which were funded. Since most of Corus's products are the outcome of mass-production, one single idea can lead to an enormous saving. Besides, some of the *eureka!* ideas in 2004 resulted in patentable outcomes.

Ideally, the *eureka!* system works as follows (see also Figure 4). In the 'ideas capture' map all Corus RD&T workers are invited to come up with ideas – the map can easily be opened via the Corus intranet. Only a superficial description of the idea is enough at this stage. Parallel to this the Corus business units can give an idea of their needs in the 'opportunities capture' place. During the 'first screen' phase, the idea is judged by experts (peers) who are selected by the ideator him/herself. (S)he has to consult at least one programme manager and one resource manger.

In the 'idea enhancement' phase, a successful idea (first screen) can be worked out by the ideator. In this phase the ideator has to give information with regard to the following topics: 'objectives and deliverables', 'probability of success', 'business unit needs that will be met', 'recourses', 'key go/no go decisions', 'intellectual properties'. After enhancement the idea will be put forward into the 'second screen' phase; if not, the idea will be kept in the *eureka!* archive. In the second screen phase the idea is put into the 'adoption phase' map where it can be picked up by one of the Corus funding managers. If it has not been picked up after a period of time, the idea will be put into the archive in any case.

The route described above only mirrors the formal route of an idea throughout *eureka!*. The aim of the system is to cover more and better ideas within a shorter amount of time. Furthermore, according to us, it can be interpreted as an attempt by the R&D managers to limit the subjective judgement of ideas. In daily

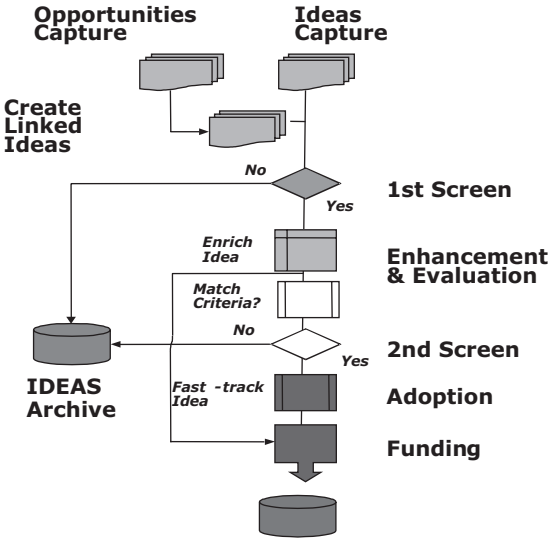

Figure 4. The Formal Structure of eureka!
Source: Corus RD&T

practice, however, we found out that researchers take alternative routes to get an idea funded – or, in other words, that the way ideas 'travel' through the organization is much more complicated. In the sections below, we will show how in the context of *eureka!* the Corus researchers not only come up with ideas, but also try to sell ideas in order to get them funded.

Crea-Political Strategies of Researchers at Corus RD&T

After an idea has been put into the *eureka!* system, the ideator has to select at least one programme manager, at least one resource manager and optionally some colleagues (researchers). All have to judge the idea; if the resource (department) manager or the programme manager is positive about the idea, the ideator can continue to work on it. At this point, the manager who has given permission has to commit him/herself to the idea to stimulate it. Most respondents argued that it is hard to select evaluators if the idea should be applied in a field not well known to the ideator. Therefore, what they want is to have a range of people as evaluators (from the *intimate* and later the *professional circle* in our model), selected from various areas of knowledge, to have the appropriate persons comment on the idea.

When the selected evaluators are not positive about the idea they will vote 'no'. In that case they have to provide a reason. Because in this phase the evaluators do not always have enough in-depth knowledge and expertise, according to our respondents some of the ideas are not very well evaluated. Although the evaluator has to give comments ono the idea with respect to the content, we found out that most of the ideators decide not to resubmit the idea. The remark of a respondent below is illustrative:

> The system might be improved by having an option to automatically resubmit an idea that has been modified in response to specific comments – evaluators who have voted 'No' should, in such cases, receive a notification that their concerns have been addressed and that the idea should be re-evaluated in the light of these modifications.

From the discussions we had with the research people (during the interview sessions) we could deduce that particularly the social, political activities parallel to the formal route are a condition for success. This corresponds with our model, in which the actions of the ideator and the interactions between the different phases in the crea-political process are central. Researchers literally were *selling* the idea – the most important phase in our model, since it refers to the crea-political activities – even if for them it is obviously an excellent one. One respondent, for example, told us:

> The system is only facilitating; you have to do the lobby-work yourself. Therefore it is always difficult to get funding for a new project, because it is not so much the technological innovation, but the lobby-work and the organizational skills that count. The value of *eureka!* lies in the formal structure and transparency.

It is in this process that the ideator tries to convince the knowledgeable other of the usefulness of the idea. Maybe even more important, it is the business unit people who must be convinced about the usefulness of an idea (especially those in the *professional circle*). If the production people do not commit themselves to the outcomes of research, an idea will fail in an early stage. Thus it is necessary for the researchers to know whether the business unit will be interested in a certain idea or not. In the whole process of this 'technology ideas transfer', social activities – such as informal contacts and meetings – are crucial. This idea was confirmed by the Programme Manager Innovation who told us:

> If you are familiar with someone you can call to discuss your idea, and if you have worked together, he knows that you are capable of good research. That is different to the situation in which one receives the idea electronically without knowing about the background of the researcher.

What is important in the lobby process (the *selling of ideas* phase) is to find and contact people with specific knowledge and commitment to the idea who can give quick and adequate comments. The respondents expressed an urge to receive remarks and comments to an idea within a relatively short period of time. This is illustrated by the case in Figure 5 below.

In practice, the ideator often consults a former R&D colleague who has changed over from the RD&T department to a business unit. Such a person is not only part of an informal network within Corus, but also has the expert knowledge (of both research and production) to judge the relative quality of an idea. The quality of inter-unit ties seems to be very important. In this respect, most of our respondents indicated that the reputation of the ide-

The use of *eureka!*

Mr Janssen is working at Corus RD&T IJmuiden

My idea was inspired by developments in Germany. My plan to develop the idea was justified by the committee that gave me a one-year budget to develop the idea. This is the way it should work according to me.

At any time, the idea has been recorded in the system of the Business Unit and there it was finally rejected. Next, I visited the Business Unite to figure out why the idea had been rejected. The reason was the lack of information about the implications of the idea for the Business Unit. Moreover, they argued, the idea was already in use by other companies and therefore not innovative enough. At that time I continued my lobby activities to get funding for the idea, which was a hard thing to do, because I had to convince people who had rejected the idea in an earlier stage. It is often argued by R&D people that the Business Units don't have a focus. However, I think that we cannot always convince them of the importance of our ideas. At a certain moment I went to the Business Unit to talk with the people who seemed to be interested in the idea after all. So, my lesson was not to stop the lobby process after a 'no' of a single person, but to convince others of the importance of my idea. Of course then you can also come to the conclusion that you have had a bad idea, but the argument that the Business Units cannot focus is too easy. Also the argument of budget problems is not decisive according to me – try to implement the idea with a smaller budget.

So, what I did, and I think this is a success factor, is not to talk first of all with the Product Manager (which is the 'normal' way to do it) but I went directly to the commercial people. After all they have feeling with the market and have reasons to say: this is interesting for us or not. After our meeting the commercial person went to the Product Managers with the message: 'This is important for us!'. The influence of the commercial person on the Product Manager was of a great importance.

Figure 5. The use of eureka!, Case Janssen
Source: interview by the authors.

ator is a crucial success factor – the higher the reputation of an individual researcher, the greater the chance that a project will be approved.

What is important for the overall success of an idea in *eureka!* is adequate feedback fromthe manager(s) to the ideator (to facilitate the interactions between the *creating*, *selling* and *funding* phases). For the ideator, moreover, a transparent schedule of the funding-process is crucial. It is in this phase that (s)he is supposed to get the (financial) means to develop and elaborate on the idea. However, we found that researchers at Corus are de-motivated by the idea that positive comments from the commentators in the second screening round do not always (automatically) lead to funding.

In the whole process of selection it is important for the ideator to notice that an idea can differ in quality as a result of the company's strategy. The content manager of *eureka!* told us that he makes a distinction between ideas that 'should be done', ideas that 'could be done', and ideas that 'do not fit within the strategy' (which is an extra selection – that takes place in the *funding phase* of the model – in the whole process of creativity). That means that even if an idea can be potentially useful, it can still be rejected (by people in the corresponding *managerial circle*) at any time because of the lack of money available to fund all ideas. To avoid ideas of which the contents are outside the scope of Corus' production plans, *eureka!* offers a section (the Opportunities Capture Map) in which the production strategy of each business unit is clarified. A (technical and/or market) opportunity can be used as inspiration for one or more ideas.

But even if an idea has been rejected (in the *managerial circle*), it is put into the *eureka!* archive and in a way becomes part of the research department's 'memory'. The archive is important for at least two reasons. In the first place it can function as a back-up of rejected ideas with which new ideas can be compared. Until now the archive has not been used for this reason, because of capacity problems and lack of time. In the second place, the content manager found out that it can be useful to re-evaluate some of the rejected ideas at a later time, because the ideas can become useful because of changing technologies in production, the raise of the research budget and/of contextual factors (i.e. developments in the market). In other words, there is a possibility that an idea goes back from the *funding of ideas*-phase to the *selling of ideas*-phase (represented by the arrow that points left in our model). However, at any time it is the ideator who has to be alert in order to breathe new life into the idea – the *eureka!* archive will not do that automatically. Again, it is the person and not the system that has to take actions.

Discussion and Conclusion

In this article we have first discussed two different models of creativity (idea) management. It appears that within each of these models there is room for the notion that creativity is not so much in the mind of the individual but that it is a social process. However, even with the help of these models it is hard to find out how the individual behaviour of the ideator must be seen in the light of the political strategies of the individual within the organization.

Therefore, we have come up with an alternative model in which we call attention to what we call the crea-political phase in the process of creativity (idea) management. The theoretical contribution of this article to the field of creativity management is the idea that the success of a creative idea is above all a matter of political activities and strategies of the ideator. It pays attention to the notion that organizational creativity is an individual expression on the one hand and organizational commitment on the other. The major implications of this model for the understanding of creativity (idea) management are discussed in what follows.

First, the model gives ample room for the notion that an idea does not come up in isolation, but is the outcome of negotiation. Creativity in an organizational context emerges from a process of sharing information with other people within the organization. Of course, an idea is produced by individuals with inner creative impulses and ambitions, but such an idea only gets meaning in the social. In the daily reality and practice of the organization, people of different backgrounds will identify the quality of an idea. In this way, the model gives rise to the idea we raised in the introduction to this article, namely that organizations (such as, in our case, Corus) can profit from knowledge creation only if the individual creative action and idea generation (within the different *creating*, *selling* and *funding* phases) is embedded in organizational routines and local research agendas (represented by the different *intimate*, *professional* and *managerial* circles).

Apparently, not every creative expression will result into a valuable or problem-solving idea. Ideas can be rejected for reasons regarding the content (i.e. an idea is impracticable for technical reasons) or – and even more likely – for reasons related the organizational context of an idea (i.e. budget problems, priority of other ideas, organizational policy, competition and so on). In order to anticipate on the idea selection, the ideator has to put effort in the propagation of his/her idea (the *selling of ideas* phase). For the manager, this demonstrates the need for organizational structures (such as strategic knowledge platforms) that stimulate and facilitate possibilities for information sharing and exchange. For the ideator it shows the importance of 'political' strategies in order to put an idea forward successfully.

Second, we paid attention to electronic idea management (ICT) systems, which play a crucial and growing role in the whole process of idea generation and selection within organizations. Electronic idea management systems that are used in the crea-political phase have both an enabling and a constraining effect upon the success of an idea. Possible thresholds for new innovative ideas are lowered because of the easy accessibility of electronic databases (especially in a situation in which employees have equal possibilities to make use of the system). In this way the system enables the ideator to develop ideas that otherwise would not have come up. However, a system can also lead to indolence if the ideator thinks that it is the system that will do the hard work and that (s)he can lean back, which is an unintended consequence of the use of electronic knowledge systems. Thus, the system-in-use can easily create the idea that there is an 'automatic and one way route' from a creative moment to a viable idea (i.e. an idea that will be funded by the organization). Accordingly, as we have argued, the system must be seen in the context of creativity as a political (sense-making) activity. The management must be aware of the fact that an electronic idea management system is not a neutral element in the process of creativity management, but one that produces an effect within a context in which creative ideas must be transformed into practicable ideas.

In addition to the model, we presented a case study of the idea management at Corus RD&T, which is only the first start to 'test' the strength of the model. The Corus R&D management has implemented an electronic idea management system in order to enable researchers to submit ideas and to ensure that no ideas are lost. That means that the interactions between the *creating of ideas* and the *funding of ideas funding* phases are facilitated by an electronic management system. The system, *eureka!*, thus functions as an important element in the creativity (idea) management. Commonly speaking, we found out that researchers at Corus judge *eureka!* as an enabling tool during the interactions with others in the company. It is interesting to note that the respondents indicate that the lobby work (during the *selling of ideas* phase in our model) is the most explanatory factor in the funding process. In other words, the more

people you are familiar with within the company with whom you can discuss the idea, the more likely it is that an idea will be funded in the end. While this concept would hardly be surprising to practitioners, it is seldom explicitly included in models of creativity management.

The above case is an illustration of how the crea-political phase works in daily practice. Further research into the crea-political phase is needed in order to understand the different strategies that are possible, the influence of contextual factors during the process of negotiation and circumstances in which the different strategies can be used. Moreover, in this article we have not taken issues of gender and diversity (e.g. aging, identity, professional backgrounds and so on) on the one hand, and organizational structures (such as hierarchies, firm size, company structures and so on) on the other hand, into consideration. Instead we have presented a sensitizing model, which links creative and political processes, and understands the management of creativity as part of these multi-faceted and interrelated processes.

Acknowledgements

Earlier versions of this article were presented at (1) the ECCI-Conference, Lodz Poland, September 2005 by Han Bakker, (2) the IKON seminar series in Warwick, UK, November 2005 by Kees Boersma and (3) the ESIC seminar series in Eindhoven, The Netherlands, December 2005 by Kees Boersma. We would like to thank the contributors of these seminars and the two anonymous referees of this journal for their comments on earlier drafts of this article.

References

Akrich, M. (1992) The De-Scription of Technical Objects. In: Bijker, W.E. and Pinch, T. (eds), *Shaping Technology/Building Society*. MIT Press, Cambridge MA, pp. 205–24.

Alvesson, M. (2002) *Understanding Organizational Culture*. Sage, London.

Amabile, T.M. (1983) *The Social Psychology of Creativity*. Springer-Verlag, New York.

Amabile, T.M. (1998) How to Kill Creativity. Keep Doing What You're Doing. Or, if you Want to Spark Innovation, Rethink How You Motivate, Reward, and Assign Work to People. *Harvard Business Review*, September/October, 77–87.

Argyres, N.S. and Silverman, B.S. (2004) R&D, Organization Structure, and the Development of Corporate Technological Knowledge. *Strategic Management Journal*, 25, 929–58.

Berends, H., Boersma, F.K. and Weggeman, M. (2003) The Structuration of Organizational Learning. *Human Relations*, 56(9), 1035–56.

Boeddrich, H.J. (2004) Ideas in the Workplace: A New Approach Towards Organizing the Fuzzy Front End of the Innovation Process. *Creativity and Innovation Management*, 13(4), 274–85.

Boersma, F.K. and Kingma, S.F. (2005) From Means to Ends: The Transformation of ERP in a Manufacturing Company. *Journal of Strategic Information Systems*, 14, 197–219.

Bourdieu, P. (1992) *The Logic of Practice*. Stanford University Press, Chicago.

Burgelman, R.A. (1983) A Process Model of Internal Corporate Venturing in the Diversified Major Firm. *Administrative Science Quarterly*, 28, 223–44.

Curry, A. and Stancich, L. (2000) The Intranet – an Intrinsic Component of Strategic Information Management? *International Journal of Information Management*, 20, 249–68.

Cross, R. and Parker, A. (2004) *The Hidden Power of Social Networks. Understanding How Work Really Gets Done in Organizations*. Harvard Business School Press, Harvard.

Czarniawska, B. and Joerges, B. (1996) Travel of ideas. In Czarniawska B. and Sevon, G. (eds), *Translating Organizational Change*. Walter de Gruyter, Berlin pp. 13–48.

Damsgaard, J. and Scheepers, R. (2001) Harnessing Intranet Technology for Organizational Knowledge Creation. *Australian Journal of Information Systems*, December 2001, 4–15.

Drazin, R., Glynn, M.A. and Kazanjian, R.K. (1999) Multilevel Theorizing about Creativity in Organizations: a Sensemaking Perspective. *Academy of Management Review*, 24(2), 286–307.

Eisenhardt, K.M. and Zbaracki, M.J. (1992) Strategic Decision Making. *Strategic Management Journal*, 13, 17–37.

Ekvall, G. (1971) *Creativity at the Place of Work*. Reklamlito Stockholm.

Feldman, D.H., Csikszentmihalyi, M. and Gardner, H. (1994) *Changing the World. A Framework for the Study of Creativity*. Praeger Publishers, Westport.

Fujimura, J.H. (1987) Constructing 'Do-able' Problems in Cancer Research: Articulating Alignment. *Social Studies of Science*, 17, 257–93.

Gardner, H. (1994) The Creators' Patterns. In: Feldman, D.H., Csikszentmihalyi, M. and Gardner, H. (eds) *Changing the World. A Framework for the Study of Creativity*. Praeger Publishers, Westport pp. 69–84.

Garud, R., and Ven, A.H. van de (1992) An Empirical Evaluation of the Internal Corporate Venturing Process. *Strategic Management Journal*, 13, 93–109.

Garud, R. and Rappa, M.A. (1994) A Socio-Cognitive Model of Technology Evolution: The Case of Cochlear Implants. *Organization Science*, 5(3), 344–62.

Georgdottir, A.S. and Getz, I. (2004) How Flexibility Facilitates Innovation and Ways to Manage it in Organizations. *Creativity and Innovation Management*, 13(3), 166–75.

Giddens, A. (1984) *The Constitution of Society*. Polity Press, Cambridge.

Hardy, C. and Clegg, S.R. (1999) Some Dare Call It Power. In: Clegg, S.R. and Hardy C. (eds), *Studying Organization: Theory & Method*. Sage, London pp. 368–87.
Hellström, C. and Hellström, T. (2002) Highways, Alleys and By-lanes: Charting the Pathways for Ideas and Innovation in Organizations. *Creativity and Innovation Management*, 11(2), 107–14.
Henry, J. (2005) *Creative Management*. Sage, London.
Hitt, M.A., Ireland, D.R. and Lee, H-U. (2000) Technological Learning, Knowledge Management and Performance: An Introductory Essay. *Journal of Engineering and Technology Management*, 17, 231–46.
Kogut, B. and Zander, U. (1996) What do Firms do? Coordination, Identity and Learning. *Organizational Science*, 7, 502–18.
Latour, B. and Woolgar, S. (1986) *Laboratory Life. The Construction of Scientific Facts*. Princeton University Press, Princeton.
Latour, B. (1987) *Science in Action. How to Follow Scientist and Engineers Through Society*. Harvard University Press, Cambridge MA.
Lazaric, N., Mangolte, P.A. and Massué, M.L. (2003) Articulation and Codification of Collective Know-how in the Steel Industry: Evidence from Blast Furnace Control in France. *Research Policy*, 32, 1829–47.
Leonard-Barton, D. (1992) Core Capabilities and Core Rigidities: A Paradox in Managing New Product Development. *Strategic Management Journal*, 13, 111–25.
Orlikowski, W.J. (2000) Using Technology and Constituting Structures: A Practice Lens for Studying Technology in Organizations. *Organization Science*, 11(4), 404–28.
Prusak, L. and Cohen, D. (1998) Knowledge Buyers, Sellers, and Brokers: the Political Economy of Knowledge. In: Neef, D., Seisfeld, A.G. and Cefola, J. (eds), *The Impact of Knowledge*. Butterworth-Heinemann, Woburn pp. 137–59.
Saari, E. and Miettinen, R. (2001) Dynamics of Change in Research Work: Constructing a New Research Area in a Research Group. *Science, Technology and Human Values*, 26(3), 300–21.
Simonton, D.K. (1988) Creativity, Leadership, and Chance. In: Sternberg, R.J. (ed.), *The Nature of Creativity. Contemporary Psychological Perspectives*. Cambridge University Press, Cambridge pp. 386–426.
Swan, J. and Scarbrough, H. (2005) The Politics of Networked Innovation. *Human Relations*, 58(7), 913–43.
Tell, F. (2004) What Do Organizations Know? Dynamics of Justification Context in R&D Activities. *Organization*, 11(4), 443–71.
Thamhain, H.J. (2003) Managing Innovative R&D Teams. *R&D Management*, 33(3), 297–311.
Tropman, J. (1998) *The Management of Ideas*. Quorum London.
Turner, V. (1967) Betwixt and Between: The Liminal Period in Rites the Passage. In: Turner, V. (ed.), *The forest of symbols: Aspects of Ndembu ritual*. Cornell University Press, Ithaca, pp. 93–111.
Van Dijk, C. and Van den Ende, J. (2002) Suggestion Systems: Transferring Employee Creativity into Practicable Ideas. *R&D Management*, 32(5), 387–95.
Verhaeghe, A. and Kfir, R. (2002) Managing Innovation in a Knowledge Intensive Technology Organization (KITO). *R&D Management*, 32(5), 409–17.
Wenger, E. (1998) *Communities of Practice. Learning, Meaning and Identity*. Cambridge University Press, Cambridge.
Wenger, E., McDermott, R. and Snyder, W. (2002) *Cultivating Communities of Practice. A Guide to Managing Knowledge*. Harvard Business School Press, Boston.
Weick, K.E. (1995) Sensemaking in Organizations. Sage, London.

Drs. Han Bakker (h.j.bakker@hro.nl) is Lecturer at the Hogeschool Rotterdam in the Rotterdam Institute of Social Education (RISO). His research interest is in 'creativity', 'management of creativity' and 'idea management'. He is author of a current introduction on Creative Thinking. Currently, he is working on his Ph.D. on Idea Management in Organizations – the Corus case is part of this work. Amongst others he is teacher in the courses Creative Thinking and Cultural Research.

Dr.ir. Kees Boersma (fk.boersma@fsw.vu.nl) is Associate Professor at the Vrije Universiteit Amsterdam in the group of Culture, Organization and Management. His research interest is in 'science and technology studies', 'business history and history of technology', and in 'organization, culture and power'. He published widely on R&D history, organizational learning, and organizational culture. His publications appeared amongst others in journals as *Enterprise and Society*, *History and Technology*, *Human Relations* and *Journal of Strategic Information Systems*. He is teacher in the courses Organizational Behavior, Organizational Politics and Technology and Culture.

Drs. Sytse Oreel (sk.oreel@oreel.nl) is currently working as a manager in a Dutch steel company (SME) and interested in culture, organization and innovation. He studied Culture, Organization and Management at the Vrije Universiteit in Amsterdam. His master-thesis (2004) was about creativity and innovation management at Corus.

Appendix 1

Table A1. Number and Functions of Respondents

Function of respondent	Number	Percentage
Department Manager	3	1.7
Programme Manager	3	1.7
Knowledge Group Leader	18	10.4
Principal Scientist	7	4.1
Principal Engineer	3	1.7
Project Coordinator	12	6.9
Senior Researcher	50	28.9
Researcher	49	28.3
Senior Research Assistant	3	1.7
Research Assistant	11	6.4
Member MT	0	0.0
Other:	14	8.1
Total	**173**	**100.0**

Appendix 2

Table A2. Outcome of the Questionnaire

Research cluster		Question	Agree (%)	Disagree (%)
The role of the ideator	1	My reputation within the organization influences the chances of success of my idea	65	35
	2	I appreciate it when judges point out alternative possibilities for my idea	89	11
	3	I appreciate the support of peolple from the marketing and financial department important	89	11
The role of the evaluator	1	Sometimes the evaluator does not take the time to give thorough and adequate comments	74.5	25.5
	2	I understand that the evaluators are too busy with their own tasks	72.7	27.3
	3	The evaluators use other than just the formal criteria in the recommendation to select an idea for adoption or funding	86.7	13.3
	4	Business Units not always benefit by new, radical ideas	60.7	39.3
The lobby and funding process	1	When I look for "funding" for my idea I have to show initiative to a "funder"; you cannot expect the system to do this for you	73.9	26.1
	2	I do not like to annoy acquaintances with extra work of judgment in order to gain financing	37.8	62.2
	3	People in my network can help me to bring my idea further	68	32
	4	After the year plans for the projects have been made it is impossible to get funding for ideas	81	19