

THE ROLE OF INTRINSIC MOTIVATION WHEN MANAGING CREATIVE WORK

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ABSTRACT

While implementing and evaluating computer support for corporate creativity it was noticed that the sheer presence of technology does not guarantee usage. Factors such as organisational culture and management attitudes seem to have an equally important role, and this observation called for a more focused analysis of the motivational aspects of creativity management. Based on literature and empirical data, four managerial advice to promote corporate creativity are presented: abandon reward systems; officially recognise creative initiatives; encourage self-initiated activities, and; allow redundancy

Keywords: organisational creativity, reward systems, intrinsic motivation, knowledge management

1. A NEED FOR CREATIVITY

The importance of creativity in industry has risen dramatically during the last few decades. During the peak of the industrial era, a company could prosper from slowly developing and refining one single product or service. The increasing pace with which business now reshapes itself – propelled by the new capabilities offered by information technology (IT) – places higher demand on the organisational members to be able to see, and grasp, new opportunities. Globalisation, and the competition that accompanies it, further adds to the need for creativity in an entrepreneurial way, and it is argued that employees of tomorrow will be valued more for their ability to create new knowledge than for being able to manage known facts [1, 2, 3]. Creativity will therefore become a quality of increasing importance and a vital branch of knowledge management (KM).

Although creativity is highly unpredictable, it can be promoted. If you in a library start reading book after book looking for a particular word, you cannot predict when and where it will show up, but you know with certainty that you will eventually find it. However, by carefully choosing what shelf to start from, you may *increase the probability* for the sought word to turn up.

Similarly, managing creativity is about raising the probability for creative acts to happen by stimulating the factors that works in favour of creativity [4].

1.1 Traditional suggestion systems

The traditional way to address this need for continual improvements has been to implement some form of suggestion system and to encourage employees to submit improvement proposals to it. These proposals and ideas are then typically attended to and reviewed by Proposal-Handling Committees (PHCs). Good suggestions are usually rewarded in some way, while not so good proposals are rejected. However, there are serious shortcomings with such systems. Firstly, there is a problem of communication. Suggestions are seldom shared within the organisation. Good ideas may be implemented locally but remain unheard of in other parts of the organisation, resulting in the “reinventing-the-wheel”-syndrome. Other ideas may be prematurely rejected due to the proposer’s problem to accurately communicate the vision that he or she has, or the PHC’s limited capacity to understand and appreciate the quality of a perhaps innovative - and thus unusual – suggestion. Had these ideas only been made public, they could have started other creative ideas elsewhere in the organisation.

Secondly, many ideas are never proposed at all due to several reasons. One reason generally recognised as a serious performance blocker is evaluation apprehension: the fear of being evaluated by ones’ peers. We are reluctant to present silly ideas if we risk losing face in front of our colleagues. Instead, we keep our potentially revolutionary ideas to ourselves, again missing an opportunity for organisational benefit. Another reason is the threshold an official suggestion system constitutes: we may feel that our idea is not worthy of being submitted as an official proposal or we may lack the ability or motivation to write-up our proposal in the form required for a suggestion to be accepted.

1.2 An alternative approach

The work described here has been aimed at improving corporate creativity by designing and implementing IT

support for a brainstorming-based approach to idea generation. By applying the principles underpinning brainstorming as posited by Osborn [5], i.e. quantity over quality; elaboration on others' ideas; and absence of criticism, I hoped to address the problems mentioned above by providing a complement to the suggestion systems traditionally used in industry.

Having a desire not only to study and understand but also intervene in and influence the processes under study, my research approach may be described as an *action case* [6]. This hybrid is a mix of understanding and change, designed to balance the trade-offs between being either an observer capable of making interpretations or a researcher involved in creating change in practice. Therefore, this research takes place in a real industry setting.

Diffusion and adoption of technology depends not only on technology itself, but also on structural and cognitive factors such culture, motivation, trust, and mindset [7]. KM systems in particular must not be seen as stand-alone systems but as a symbiosis between social processes and technology. Amabile [8] has singled out motivation to be the key factor for creativity and I shall therefore limit my discussion to elaborate on motivation and its managerial implications.

To provide the reader with a background I shall shortly describe the prototype system implemented by giving a conceptual description of it. I thereafter present some empirical data from my interviews before ending the paper with a discussion and a conclusion.

2. WORK ON BRAINSTORMING

Since introduced by Osborn [5] in 1953, brainstorming has been widely used in industry and business as a technique for idea generation and problem solving. However, in contrast to its popularity stands the result of several studies that consistently show that nominal brainstorming, i.e. the aggregated work of individuals working simultaneously but without contact with each other, outperform group brainstorming. Three main reasons for this have been identified [9].

Firstly, there is *evaluation apprehension*, which refers to a situation when the group members are reluctant to express their perhaps unpopular or politically incorrect suggestions or poorly developed ideas in fear of being judged or evaluated by peers or managers. Secondly, *social loafing* occurs when group members intentionally limit their contributions and rely on other group members to do the job. Thirdly and finally, there is the problem of *production blocking*, i.e. the result of group members having to wait for others to finish before they can offer their own ideas. While waiting ideas may become obsolete or forgotten, or, in order not to forget, people concentrate on and rehearse their

own ideas instead of participating and generating more and new ideas.

Electronic brainstorming (EBS) was introduced as an attempt to address these three problems. In EBS, the participants use networked computers to send ideas to and read ideas from the group. By allowing anonymous idea entry the evaluation apprehension problem is avoided. The logging capability of computer software helps reduce the social loafing since information on the relative performance of each individual may be made salient. Finally, since participants are using individual computer terminals, idea entry and sharing may be performed by all users simultaneously, thus eliminating much of the production blocking observed in face-to-face brainstorming.

Though apparently solving the three main problems mentioned above, it has been suggested that EBS only outperform nominal brainstorming when used in large groups. Despite this suggestion not much research has been done on really large groups.

3. THE MINDPOOL PROTOTYPE

In response to the call for more study on large groups Mindpool is an intranet application available for the entire organisation. (See [10, 11] for details about its predecessor). The most fundamental design principles for Mindpool are that work is carried out asynchronously, users are anonymous but yet able to contact, and the entire organisation may be addressed, instead of just a group of a selected few. The idea is to mimic the creative atmosphere found in brainstorm sessions, where no suggestions are turned down but instead used to spawn new and possibly even better ideas.

Unlike ordinary EBS sessions, Mindpool supports asynchronous brainstorming. Users do not have to be active simultaneously, which removes the temporal restriction present in other media, e.g. chat forums.

The system further allows the proposer to be anonymous while yet providing a mechanism for letting people contact them. The reasons for anonymity are two; firstly, it eliminates evaluation apprehension and thus enables users to submit proposals without risking making fools of themselves – a fact known to have a positive effect on the amount of ideas. Secondly, not revealing the contributor helps separating personalities from the issues, thus promoting a more objective evaluation, especially so when power differences exist among the participants [12].

Suggestions are submitted as emails and added to a web page. The web is accessible from all platforms and the persistent nature also allows the idea to linger long enough for it to be found by many different people in different locations and contexts, thereby

allowing ideas to develop long after the point of introduction.

The possibilities to add comments directly to the proposal, as is the case in news groups, is absent in Mindpool. This helps shielding the new idea from public negative critique. Still, a mechanism that made it possible to contact the proposer either to ask for or to provide more information was provided. Though the latter may contain criticism, the original idea remains publicly available and can serve as a seed for others, while the critique is not displayed. The fact that each contributor can be traced also enables individual recognition, which is otherwise a problem in anonymous EBS systems.

4. EMPIRICAL RESULTS

Before installing and evaluating Mindpool, I needed to set a base line for my later experiments by interviewing the employees about their views on creativity, suggestion systems, and management. Below, I first present the results from the 10 semi-structured interviews before reporting from the prototype evaluation.

4.1 Initial interview data

A master student conducted ten semi-structured interviews with employees of a large Swedish IT company. These interviews, lasting approximately 40 minutes, included both members of the Proposal-Handling Committee (PHC), i.e. the people responsible for evaluating submitted ideas, and ordinary office workers. All interviews were taped and analysed by the author.

Most respondents stressed the importance of stimuli of some kind to spark creativity, and mentioned the interaction with other people as an important source. Aside from the shared view of "input from people" as being an important stimuli a diversity of other situations were mentioned during the interviews: facing a challenging task; going to conferences; visiting other companies; looking at different applications; or doing physical workout. "It's more difficult to be creative when you really have to" is an utterance that well depicts the common view of the interviewees, that creativity is highly situated and spontaneous.

All respondents believed that a suggestion submitted to the PHC had to be both concrete and well thought-through to be considered. "It has to be serious stuff, which makes you a bit reluctant to submit" said one respondent who believed the threshold for participating was too high. Some also conveyed it as meaningless to submit suggestions since somebody else had probably already thought of the same idea and already suggested it.

Several respondents complained about not having time for extraordinary activities, or to do things outside their immediate duties: "You [...] don't have time to, like, speculate, or be creative in a general sort of way. We're too tightly governed by budgets and deadlines". Another interviewee pointed out that "If you have too much to do you can't be creative any more". It was also suggested that there should be a separately designed forum alongside the suggestion system where creative people would be "allowed to spend time" trying to develop ideas they have. To be recognised as a creative person and allowed entry to such a group would be like becoming one of the "Knights of the Round Table", said one respondent.

4.2 Application evaluation results

Mindpool was implemented on the corporate intranet and tested during four weeks. Though the application was available to everybody in the corporate group we explicitly invited 32 users to test the application. Among these 32 were the 10 people interviewed earlier. Not all invited users tried the application but the log files revealed that 52 different users accessed the application, indicating that it was found by people other than only those invited. Most people did only read the suggestions without making suggestions of their own. This, however, was an expected behaviour. Mindpool received 22 suggestions during the four-week test and 14 of these were submitted the very first week. The 22 ideas were submitted by eight different users.

The prototype was no immediate success even if some user thought of it as potentially useful: "I think this is good, if only you get going and get it up to speed sort of... [...] You don't want to be the first one to contribute".

Several interviewees, however, saw Mindpool and the traditional suggestion system as competitors: "If you have a good idea, why post it here [in Mindpool] instead of submitting it to the PHC? There you might get a reward and you know you'll get an answer". A similar comment was: "If I post my idea on this site, someone might steal it and send it to the suggestion system...". Those who saw Mindpool as a complement to the suggestion system found another problem (which also was raised during the work with Mindpool's predecessor [10]: What will happen if an initial idea submitted by A inspires someone else (B) to generate a better idea, which then is modified by yet another person (C) to a really great idea that receives acknowledgement by the PHC and renders a gratification? Should only the last person get the credit? What about the other two (A and B) who got the idea started?

Those who had not tested Mindpool blamed it on not having time: "I haven't got round to it. If you don't do it right away you forget about it. We haven't time to be creative on pure speculation".

5. DISCUSSION

The design of Mindpool, with its distributed and asynchronous nature, enables company-wide brainstorming through the use of web technology. Mindpool eliminates the need of large facilities and simultaneous sessions, thereby, in theory, allowing company-wide continuous brainstorming. The novel blurring of boundaries between electronic brain-storming and ordinary work activities should have a positive effect on creativity. In practice, however, this has not been observed.

5.1 Competitive attitudes

Perceiving Mindpool and the suggestion system as competitors is very unfortunate from an organisational point of view. There is an obvious risk that neither A, B, nor C, as discussed above, would have managed to create the useful idea on their own, in isolation. The final idea was the result of the interaction of A, B, and C – a social knowledge creation process that required the combined input from all three parties [13].

For example, one user contributes with A, which may be an idea, a suggestion, or even just a remark: *“All email is driving me crazy. Can’t we throw out our email system!”* This somewhat unrealistic suggestion may be observed by another user and spawn a process in that person’s unconscious mind that later results in B: *“Must all this For-Your-Information email really be email? Aren’t there any other channels?”* Note that A and B do not connect visibly – there is no mechanism in our prototype grouping or linking suggestions. This is must be so because even the user suggesting B may not be aware of the mental link from A. In practice, there may be weeks or even months between A and B. Suggestion B may in a similar manner eventually lead to C, which in turn inspires D and E, and so forth. None of these suggestions or ideas needs to be “good” or “useful” in a practical sense. Eventually, however, this cumulative process leads to a point where a useful, constructive, practical suggestion can be identified (G: *“Let’s create a Lotus Notes database with all new job postings”*). In a traditional suggestion system only the last person would receive acknowledgement and all the previous contributors would be ignored. Such an approach encourages employees to keep ideas to themselves. If instead all users were rewarded for participating (say in proportion to their number of submitted suggestions) there would be no reason to hold back any ideas.

5.2 Focus on extrinsic motivation

Practical experiences of Mindpool are yet in their early stages but the tentative results analysed this far are consistent with the findings derived from the work with its predecessor (see [10, 11] for details). Organisational members express a concern for not

receiving (part of) the financial reward that the final suggestion might generate. This concern can be attributed to the use of a suggestion system based on extrinsic motivation [11].

It should be noted that the suggestion system in use remunerates the proposer of a good idea with financial compensation corresponding to half of the company’s first year’s savings, which might come to a substantial amount of money. During 1999, the company under study spent approximately USD 45,000 on rewards. It was thus argued that if users A and B above are not acknowledged, they are instead encouraged to keep their ideas to themselves to try to develop them into what C managed to come up with.

However, not many employees actually contribute to the suggestion system that is in use. During 1999, the PHC received suggestions from 226 of the +2400 employees, which means that less than 10 percent of the members participated actively. Consistent research findings show that the reliance on extrinsic motivation limits participation to typically 10-15 percent of the employees, as opposed to 70-80 percent when no reward system is used, or when recognition is kept to a symbolic level [4].

5.3 The superiority of intrinsic motivation

This strong correlation between the use of intrinsic motivation and high participation in the improvement process suggests that other forms of acknowledgement should be used. A form of reward that seems to be more appropriate is being allowed to work with what one finds interesting. It so appears that when people are primarily motivated by their interest in the work and the enjoyment of that activity, they are more creative than they are when primarily driven by some goal imposed on them by others. The use of extrinsic motivation such as rewards or bonuses tend to cause a focus on the reward rather than on the task at hand, and winning the reward becomes more important than finding the most creative solution. Overwhelming empirical findings in line with these are reported from the field of social psychology of creativity and are referred to in the literature as the *intrinsic motivation principle* [8]. To be allowed to work with one’s own ideas is a reward in it self and could therefore be used to replace extrinsic motivation in form of money.

Rewarding creative work requires a delicate balancing between intrinsic and extrinsic motivation, and must be done skilfully. Whatever reward is chosen, it should be used to recognise the competence or the work ability of the group or individual, and the reward should be used to motivate further work and not act as a bribe. Encouraging work-focused feedback (as opposed to person-focused feedback) and discouraging excessive initial critique of new ideas foster a positive attitude towards creativity. By demonstrating that innovations and creativity are valued by communicating the potential of the work and accomplishments that have

been made, intrinsically motivated employee initiatives could be further propelled.

5.4 Allow self-initiated activities

Self-initiated activities are powerful because they are driven primarily by intrinsic motivation. When employees are allowed to, and in fact encouraged to, pick and pursue their own projects, they are driven by their personal interests. Research in a corporate setting has shown that professional interests rather than espoused theory is what motivates people [14]. A management strategy to promote creativity would be to present and motivate the *direction* for work but leave the individuals to conduct the work as they see fit. Employees should further be matched up with projects according to their interests or where their competence is challenged and developed.

Planned actions can only take an organisation in directions already anticipated. To reach the unexpected, the company must go beyond what is scheduled and put its trust in the unplanned actions that often are the result of user initiatives. Every unanticipated activity begins as an unofficial task [4], and very often, if not always, these unanticipated and unofficial activities are indeed also user initiated.

The expression “Skunk Works” was coined during the second World War by the aircraft manufacturer Lockheed Martins to describe a situation where a small group of technicians were allowed to work outside the established bureaucracy and with minimal management control. It has been shown that creativity and innovation is aided by low formalisation and large degrees of freedom, especially during the initial stages [15]. It is also recognised that creativity often requires extra-ordinary dedication and commitment, and that most employees would willingly do far more than the company could possibly ask of them if only they were allowed to work with things in which they were really interested.

A company should therefore allow, and encourage, their employees to act as autonomously as possible and support as much unofficial skunk work as it can [4, 16]. To be really effective, however, a system that promotes such entrepreneurship must not be restricted to any particular group, as was the case at Lockheed, but reach everyone in the organisation, since it cannot be determined in beforehand who will be creative.

5.5 The need for redundancy

Although it is not desirable to reinvent the wheel from scratch, repeating all the error previously made, it is often necessary to allow every one to build their own wheel. This is due to the strong relationship between knowledge and action. Learning-by-doing is the only way to acquire certain knowledge, and this suggests that enough redundancy should be allocated to allow for such experimenting.

However, corporate settings with deadlines and resource constraints do seldom allow for much spontaneous self-initiated activities, as testified by the quoted respondent earlier. Tight budgets and deadlines are denying the employees the ability to follow-up on the hunches they get, or to be “creative on speculation” as one respondent put it. The fact that today’s lean organisations do not allow the redundancy that is so vital to knowledge creation has also been recognised by the literature [16]. To set free the desire to initiate creative acts that already exists within most people, the company must take appropriate actions. For example, Toshiba and 3M allow their employees to devote 15 percent of their time to self-initiated activities [4].

6. CONCLUSIONS

When large sums of money are at stake, employees are discouraged from sharing thoughts and ideas with their peers. Instead, individuals are keeping their tentative thoughts to themselves, trying to work out something really rewarding. This situation causes a focus on the reward rather than on being innovative. Further, the obvious risk is that the employee may never arrive at the groundbreaking conclusion on her own, without interaction and dialogue with other humans. This motivates the following proposal:

P1: Abandon extrinsic motivation in form of (large) financial compensation.

Creativity requires an organisational culture that fosters openness, sharing, and interaction. To establish and maintain such a culture, top management must “walk the talk” and officially recognise and encourage such behaviour. Management should further show that risk-taking and (occasional) failure is okay. They must understand “*the distinction between intelligent failure and stupid mistakes*” [17, p.126]. The reward mechanism must be such that *all* ideas are recognised, since they all contain something potentially good. While we do not want to reward mistakes, we should still acknowledge and encourage the imagination that underpins them [18]. This leads to proposition 2:

P2: Officially recognise creative initiatives and achievements since this is reward in itself.

Most people are prepared to do far more than any manager can possibly ask for if only they are intrinsically motivated by genuine interest in the work. Frontline-employees are confronted with new customer requirements and notice new business opportunities much earlier than does management [16]. By the time an emerging trend has reached top executive level, been converted to official corporate strategy, and communicated back to the employees, it may be too late. Instead, seize the opportunity by empowering the frontline-employees to act autonomously according to proposition 3:

P3: Encourage entrepreneurship by allowing and supporting user-initiated activities.

When deadlines and budgets are cut so tight that the employees barely manage to do what is expected they have very small chances of being truly creative. Creativity requires people to do unexpected things and go beyond what is planned for. This can be summarised as in our final proposal:

P4: Allow redundancy in form of allocated slack time for the employees to be creative.

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