# INDUCING IDEATION COLLABORATION THROUGH COMPETITION?

Magnus Bergendahl[1,2], Mats Magnusson[1], Jennie Björk[1], Magnus P. Karlsson[1,3]

[1] IPD, School of Industrial Engineering and Management, KTH Royal Institute of Technology, SE-100 44 Stockholm, Sweden
[2] SCA Hygiene Products AB, Science and Innovation, SE-405 03 Gothenburg, Sweden
[3] Ericsson, Group Function Strategy, SE-164 83 Stockholm, Sweden
E-mail: magnus.bergendahl@sca.com, matsmag@kth.se, jenniebj@kth.se, magnus.p.karlsson@ericsson.com

## ABSTRACT

This paper investigates the inter-relationships between competition and collaboration in ideation activities. Based on data from a student experiment with structured idea generation in groups, in which different competition mechanisms where used, it is found that individual competition is a driver of idea generation and that competition between groups induces in-group collaboration. A combination of individual- and group competition enables the complementary use of competition and collaboration, resulting in high ideation performance in terms of number of ideas, idea quality, and ideation efficiency.

## INTRODUCTION

Innovation is a creative process based on interaction between individuals in a social context. This also holds for the front-end of the innovation process, frequently referred to as ideation (Björk and Magnusson, 2009). Two key mechanisms used for stimulating ideation are collaboration and competition. Collaboration has been held forward as highly important for effective sharing of knowledge, and consequently also for ideation. At the same time we note a widespread use of idea competitions (Morgan and Wang, 2010). Despite extant research on the possible use and effects of competition and collaboration in ideation, existing theories remain inconclusive. Whereas some researchers regard competition and collaboration as mutually excluding ideation mechanisms, others stress their possible combination. These conflicting perspectives call for studies of how competition and collaboration actually impact ideation, and also how these mechanisms influence each other. The aim of this paper is to investigate the inter-relationship between collaboration and competition mechanisms in ideation activities.

## EXPOSITION OF THEORY

As more collective ideation practices emerge, competition and collaboration stand out as two mechanisms for driving the generation and development of ideas. That collaboration is beneficial for ideation has been frequently proposed. In the interaction with others, comments from other individuals improve and shape originally proposed ideas, and new combinations of knowledge occur. IT-based tools providing transparent and inclusive arenas for ideation offer new opportunities for tapping into collective creativity, inside firms as well as in more open settings (Björk et al., 2014). Apart from the mere combinatorial advantage of collaboration, this approach also holds potential strengths in terms of motivational effects (Amabile, 1997). Another approach used to stimulate the generation of ideas for innovation is the use of competitions (Morgan and Wang, 2010). On an overall level, competition has been found to increase performance in a range of different activities, and arguably also in ideation. Less attention has been paid to the use of different types of competition. A first distinction can here be made between competition at individual level and competition between groups. A recently debated issue related to competition and collaboration in ideation is if the two mechanisms can be combined or if they are mutually excluding. Bullinger et al. (2010) argue the latter as they view collaboration and competition as two diametrically opposed positions along one and the same continuum. A radically different perspective is proposed by Hutter et al. (2011), pointing to the possible co-existence of competition and collaboration in so called communitition. This inconsistency in received theory calls for further investigations and leads to our research questions:

*RQ 1: What inter-relationships exist between individual competition, level of collaboration, and ideation performance?*
*RQ 2: What inter-relationships exist between group competition, level of collaboration, and ideation performance?*

## METHOD

An experiment was designed having a 2 (individual competition, yes/no) x 2 (group competition, yes/no) between subjects design as to best answer the research questions. Four manipulations were used: non-competitive, group-competition, individual-competition, individual&group-competition. 56 Master's students were enrolled in the experiment

where each session contained two to three groups of four persons, all given the same manipulation. The participants were given the task to generate ideas for 20 minutes about new wet-wipe products and packages. A questionnaire was administered after the idea generation session, focusing on perceived levels of collaboration and competition. Individual performance was assessed by four evaluators on idea quantity, -quality, and ideation efficiency. Data was analysed using descriptive statistics and ANOVA in Stata statistical software.

## RESULTS AND ANALYSIS

The levels of collaboration are significantly different between groups ($p$=0.0001, Kruskal-Wallis). Figure 1 presents the individual-competition setting to have the absolute lowest level of collaboration. The highest collaboration level is instead reported in the group-competition setting. Also the non-competitive and the indiv.&group-competition settings display high collaboration levels. Significant main effects are found for number of ideas generated, $F(3, 52) = 6.49$, $p<0.001$, and for idea quality, $F(3, 52) = 3.60$, $p<0.1$.

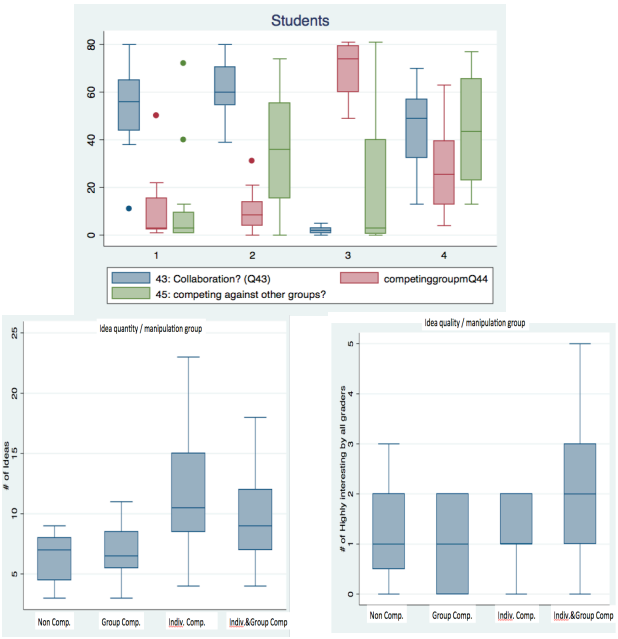


*Figure 1: Collaboration levels, number of ideas, idea quality*

The results clearly reveal that individual competition plays an important role in ideation, leading to higher numbers of ideas, and increasing quality. An interesting observation is that group competition appears to induce collaboration. Finally, the combination of individual- and group competition is found to have the positive effect of individual competition but also a high level of collaboration, induced by the group competition.

## DISCUSSION

The empirical results contrast earlier theories stressing negative effects of competition (Amabile, 1997) as they show that competition can actually support collective ideation. However, it is here important to distinguish between different types of competition. Individual competition triggers idea generation whereas group competition induces in-group collaboration, thereby improving idea quality and ideation efficiency. Used in isolation these competition modes can be questioned as they appear to bias ideation behavior towards one-sided competition and collaboration, limiting ideation performance. However, when used in combination the mechanisms are complementary and lead to high ideation performance along all dimensions, thereby supporting the earlier findings of Hutter et al., 2011). Of particular importance is the finding that group competition can be used to induce collaboration, as this offers a potentially fruitful lever to deliberately control collaboration levels.

## REFERENCES


Amabile, T. (1997), "Motivating creativity in organizations: On doing what you love and loving what you do", *California Management Review*, **40**, 39-58.

Bergendahl, M. and Magnusson, M. (2014), "Creating ideas for innovation - effects of organizational distance on knowledge creation processes", *Creativity and Innovation Management,* forthcoming.

Björk, J., Karlsson, M. and Magnusson, M. (2014), "Turning ideas into innovations – introducing demand-driven collaborative ideation", *International Journal of Innovation and Regional Development*, **5**, 429-442.

Björk, J., and Magnusson, M. (2009), "Where do good innovation ideas come from?: Exploring the influence of network connectivity on innovation idea quality", *Journal of Product Innovation Management*, **26**, 662-670.

Bullinger, A. C., Neyer, A.-K., Rass, M. and Moeslein K. M. (2010), "Community-Based Innovation Contests: Where Competition Meets Cooperation", *Creativity and Innovation Management*, **19**, 290-303.

Hutter, K., Hautz, J., Füller, J., Mueller, J. and Matzler, K. (2011), "Communitition: The Tension between Competition and Collaboration in Community-Based Design Contests", *Creativity and Innovation Management*, **20**, 3–21.

Morgan, J. and Wang, R. (2010), "Tournaments for Ideas", *California Management Review*, **52**, 77-97.