

# Creativity Barometer: An Approach for Continuing Micro Surveys to Explore the Dynamics of Organization's Creativity Climates

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## ABSTRACT

An approach has been designed for computer-supported micro surveys which measure dynamic changes of an organization's creativity climate. Employees are unobtrusively prompted to occasionally answer single questions. The main challenges are to ensure acceptance and to maintain a high participation. This is done by guaranteeing anonymity, avoiding perturbation and distraction, giving valuable feedback, and including aspects of entertainment.

## Author Keywords

Creativity climate, employee survey, micro survey

## ACM Classification Keywords

H.5.3. Group and Organization Interfaces

## General Terms

Human Factors, Measurement

## INTRODUCTION

Innovative companies must be aware of the creativity climate – the "...stimulants and obstacles to creativity in organizational work environments [1]". In the past, several survey instruments for measuring this climate of organizations and to encourage organizational change have been developed and tested (e.g. KEYS: Assessing the Climate for Creativity, [1]; TCI, Team Climate Inventory, [3]). But due to the increase of economic pressure, these instruments turn out to be insufficient: Fast economical changes force organizations to change and adapt their processes, products or services in less time and foreshorten the periods in between these changes. A very high workload and uncertainty about one's own employment could be the results and are main obstacles for creativity [2]. This causes difficulties for those companies which have to rely on their innovativeness and therefore on the creativity of their employees.

To enable organizations to timely counteract unpropitious developments, we see the need to overcome the limitation of one time a year surveys. For example [5] examined in a meta-analysis that the time between preparing a survey and presenting the results lasts eight months on average. Ap-

proaches and instruments of dynamic surveys have to be developed. Also, they have to shift from single or occasional surveys to continuing micro surveys, which are able to monitor and feedback the current creativity climate of a company or a team.

The Creativity Barometer provides immediate feedback by repetitively prompting the employees to give their opinion. By continuously evaluating the given answers, the employees can observe the development of their own attitude and mood and they can comprehend how their colleagues perceive the creativity climate. Moreover, aggregated data are provided for both, the management and the employees. Traditionally implemented employee surveys (whether online or offline) are not able to meet these affordances.

This article presents the main features of the Creativity Barometer, a prototype for computer-supported micro surveys. It measures and reflects the creativity climate constantly and unobtrusively. We describe the challenges as well as our suggestions to meet them. The prototype is currently in operation in six companies with four more following soon. First results will be available by August 2011. We have designed a highly adaptive solution which can be easily modified and applied to different organizations or to certain events such as conferences.

## CHALLENGES, SOLUTIONS AND PROTOTYPICAL IMPLEMENTATION

A tool for continuing surveys has to motivate the employees to participate and to acquire their acceptance. One central requirement is to guarantee complete anonymity if needed. Online surveys are conceived to provide anonymity. Therefore, our tool, the Creativity Barometer, is implemented as a web service and so this advantage of online surveys directly applies to the project.

The main challenge regarding the continuous character of the survey is to maintain a high participation rate over a long period of time. Answering the questions may be perceived troubling if the questions disturb the workflow or if the prompts for answering a question are presented at an unfavorable point of time. Because of the repetition of the questions the news value decreases quickly, which could be a negative influence on the participants acceptance and moti-

vation. To face all these challenges the Creativity Barometer is based on the three following principles:

**None-obtrusiveness and self determination** - The participants are enabled to answer the questions very fast without getting distracted from their workflow. We are testing several approaches to this problem by identifying typical short idle phases during work when employees are usually bored since they have to wait for something: Referring to these situations, we provide popups during the booting process of the computer, access to the survey via a terminal located at the coffee kitchen, a mobile device, or a modified screen-saver. The participants can freely decide when and where they answer questions. The only restriction is that they have to complete a given amount of the questionnaire within a predefined timespan or else their answers cannot be regarded in the evaluation of that survey cycle without distorting the results (e.g. a minimum of three answers in four weeks regarding the category *autonomy*). This survey cycles help synchronizing the feedback to whole groups (e.g. teams or departments) and enable us to reflect a company's creativity climate at fixed points of time. To retain a satisfying participation rate within the given freedom of decision, several awareness-raising activities are applied (e.g. email reminder, calendar entries or home screen widgets) to prompt the employees and to offer them multiple occasions to answer the questions.

**Short actions** – Every prompt being displayed to the employee only requests the answer to one single question. The phrasing of the question is as simple as possible so it can be easily understood. The employee only has to choose his answer on a scale of 1 to 7. Picking one option is usually connected with the activation of an additional function of the computer or the mobile device, such as opening a certain webpage or unlocking an application.

**Entertainment and stimuli** – It is for sure the best motivator if the participants enjoy using the Creativity Barometer. Ways to achieve this are a fetching experience design, different ways to answer questions that are rich in variety (e.g. mini games, photos, drawings...) and community features. Additionally the tool offers content that aims at stimulating the participants' creativity and thereby acts as a first, small intervention on the lowest level.

**Confidence and transparency via continuous reflection** – The employees should not get the feeling of being monitored by the survey. The Creativity Barometer approaches this requirement on two levels: Confidence has to be created on the organizational level. The Creativity Barometer is not a tool that judges the creativity of individual employees. Instead it reflects the corporate culture. It is an instrument of organizational development, which empowers the employees to actively change the environment they work in for the better. Transparency is achieved by the openness of information. There is no data that is exclusive to persons in leading positions. The results of the whole company and of any group are reflected to every employee. Additionally personal

results are reflected. Striking differences between the own and the group results are highlighted. The Creativity Barometer also confronts the users with information about their behavior of answering. Apart from data about the current answering cycle, notifications that an users way of answering differs much from the average way of answering is given to the participants (e.g. very high/ low answering rate or long spans of time between logins at the service)

## THE SET OF ITEMS

The Items which we use in the Creativity Barometer derive mainly from well-known and tested instruments, for example from [1] and [3]. They are categorized in 7 components like *encouraging leadership, pursuit of ideas, autonomy or freedom, pressure, team spirit, vision, and challenging work*. A typical example, which has to be rated, is: "Ideas which have been created in our team, are pursued by our company." Typically there are around 40 items for a company. Moreover, we combined creativity-related questions with a health-related perspective and included nine questions of the Salutogenesis Concept developed by [4]. The underlying assumption of this approach is that creativity and health are highly intertwined and influence each other. Incidentally, the Creativity Barometer allows us to test this hypothesis. The data provided will enable us to run a variety of analyses which help individuals and teams as well as the management to understand their situation and the development of the creativity climate.

## TECHNICAL IMPLEMENTATION

The Creativity Barometer is implemented as a Web service which can be consumed by a wide array of different devices such as... Possible clients may be desktop applications, web applications, smartphone apps or widgets integrated in third party websites. This also enables the participants to use the service independent of time and location and makes it possible to develop micro applications that only serve the purpose of answering questions en passant.

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