THE IMPLEMENTATION OF INNOVATION METRICS: A CASE STUDY

Benaim, Andre (1,2); Elfsberg, Jenny (3); Larsson, Tobias C. (1); Larsson, Andreas (2)
1: Blekinge Institute of Technology, Sweden; 2: Lund University, Sweden; 3: Volvo Construction Equipment

Abstract

The paper explores the implementation process of an innovation measuring system prototype to support a heavy machinery multinational company to secure their innovative capability. In general,companies recognize the importance of becoming innovative to become, or remain, competitive on a global market. The case company decided to pilot a metric system that corresponds to the crucial factors to secure innovative capability and work with the stepwise improvement based on the assessment results.

The methods are based on design-research approach and participatory action research. Interviews, surveys and observation were used, as well as, workshops were conducted to develop and follow up the implementation innovation measuring system.

The findings explore topics and open questions related to metric selection, purpose and use of the selected indicators, as well as challenges related to the implementation of the metric system. Some of the conclusions question the viability of measuring project teams, as well as, it suggests the need for further research to clarify whether team metrics need to be develop in parallel to organizational ones.

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Contact:
Andre Benaim
Blekinge Institute of Technology
Department of Mechanical Engineering
Sweden
axb@bth.se

1 INTRODUCTION

Companies recognize the importance of becoming innovative to remain competitive on a global market. A great deal of attention has been put on developing innovation capabilities, which is the ability to act upon innovation opportunities in two ways: on the one hand, exploring new avenues for products, markets and offerings. On the other hand, improving current offerings and operations (Björkdahl and Börjesson 2012; Boer et al 2001). These two ways are often called exploration and exploitation, or organizational ambidexterity (Kim and Mauborgne 2004; Nagji and Tuff 2012).

While aiming to perform and integrate exploitation and exploration activities into daily work, one might wonder if the ongoing activities are taking the company in the right direction, i.e., "How do we know we are making progress?" and "Are we really becoming more innovative?" Such questions reveal the need for an innovation performance measuring system, simply put it asks for Innovation KPIs (Key Performance Indicators). This paper explores the implementation of an innovation metric system within a case company.

1.1 Context

Why would a company ask for innovation metrics? In this particular case the original request was to find one specific metric that would tell the company whether they were more or less innovative than their competitors. Several benchmarking studies and internal investigations were performed before the decision was made to not look at the competition or scientific data analysis, but instead pilot a metric system that corresponds to all the crucial factors to secure innovative capability and work with the stepwise improvement based on the assessment results. The work was initiated in 2009 and during 2014 two pilot assessments were performed.

Within this particular case study, one of the motivations to working with innovation, beyond the general need of becoming innovative was the insight that there is a vast innovative potential to tap within employees. Many employees, not only within R&D, have a passion for working with innovative products and a bottom-up approach allows to complement and challenge innovative strategies by the identification of opportunities that otherwise would have been lost. If it is to have an impact, such an integrated approach of innovation requires pathways that let the creativity flow from ideation to implementation. The case company has already started working on such pathways (Benaim et al 2014a), but in those early stages they were still unsure whether or not they were actually creating the conditions for being innovative.

In large companies innovation is often directed to R&D departments. This is a classical divide in which companies work as if they had two separate entities, one working on production and the other on innovation and NPD. However, innovation capabilities can also be thought of as complementary to daily work, for example, by setting aside a specific work space and time to innovate in between the daily routine, or by being expected to innovate within it (Lawson and Samson 2001, Lund 2014).

In addition, many companies are dominated by a risk-averse, short-term focused and bureaucratic culture that makes it difficult to drive semi-radical and radical innovation, while small incremental innovation steps are often quite easy to bring forward (Assink 2001). Having a systematic measurement system in place is a way to raise awareness, and drive and monitor progress beyond the incremental innovation space. Moreover, companies with long development cycles have challenges in terms of measuring innovation according to output or outcomes. First, not all outputs will be successful outcomes in the market. Innovation related work is iterative and learning from failure is a natural part of innovation (Elmquist and Le Masson 2009; Sarasvathy 2001). Second, within long development cycles it is not useful to wait until the product is industrialized to determine whether or not the team was working in an innovative way. Third, in large physical artifact-based manufacturing companies it is hard to work with beta releases, as is commonplace in the software industry. Further, manufacturing companies cannot easily discontinue a product without facing consequences for several years. Once the product is in the market, the company is bound to offer maintenance and spare parts for typically about 10-15 years.

Therefore, an innovation measuring system that allows the company to see whether the conditions for innovation are being met is expected to be a way to drive the necessary changes in the organization and continuously strengthen the innovative capability.

1.2 Challenges of Implementing Metrics for Innovation

Innovation performance measurement has a positive impact on innovation capabilities by fostering new ideas, offerings and working routines (Saunila 2014). It can also help to diagnose, motivate, promote learning and strategy implementation related to innovation (Chiesa et al 2009; Godener and Söderquist 2004). However, it is rare to find articles about the process of implementation and its hurdles (Bourne et al 2003). Currently, companies are unsatisfied with their performance innovation system (Dewagan and Godse 2014). Within the case company the innovation related measurements do not lead to innovation (Benaim et al 2014b). Although the importance of innovation measurement systems is recognized by the literature, its implementation is not as simple as it seems. A current challenge is to agree about what to measure and how to make it practical (Nilsson and Ritzén 2014).

A few challenges are presented when implementing metric system. There is a natural NPD bias when selecting measures. This bias can be counterbalanced by looking at categories such as flexibility or innovation structures (Adams et all 2006). Another challenge is the use of the metric system to evaluate ideas too early, i.e., without the proper exploration it will be hard to define the potential of certain ideas (Langdom, 2008). In addition, people can feel limited in their creativity or that the metric system is a bureaucratic exercise (Chiesa et al 2009; Saunila 2014), which undermines the benefits of metric systems. Some of the practical challenges relate to the general evaluation and interpretation of the data retrieved (Nilsson and Ritzén 2014; Neely et al 2000; Bourne 2003). Another challenge is that the results itself can be merely informative, however people need to take action and know how to use the results of the evaluation (Stufflebeam and Shinkfield 2007). Other challenges with implementing measurement system are presented when: there is a disconnection between strategy and department or teams goals; strategy is disconnected from resource allocation; feedback is tactical instead of strategic; there is resistance to change (Bourne et al 2003).

One aspect to point out is that the frameworks often focus on the organizational level or are intended for innovation management. However, innovation in R&D is developed within teams (Zedtwitz et al 2014). From the innovation climate perspective Anderson and West (1998) suggest that the appropriate level of climate analysis is the proximal group because it is unlikely that a shared climate exist at organizational level. Therefore, we explore the team perspective for this measurement work.

For the reasons mention above this paper explores the question: How to develop and implement an innovation measuring system?

2 METHODS

The methodology is based on design research (Blessing and Chakrabarti 2009) and the paper is a prescriptive study that focuses on the implementation of a measurement system in its early stages of testing. Therefore, concrete use situations and challenges related to the implementation framework need to be identified as they emerge. For this reason, the research requires a qualitative approach, hence the use of design research guided by a participatory action research approach used within a case study (Bryman 2008;Yin 2009; Whyte 1989; Coughlan and Coghlan 2002).

The company case is a multinational manufacturing company developing heavy machinery. The reserachers worked with project and executive managers as informants and partners, as well as with a team called iCoaches. The team's mandate is to support the development of innovation capabilities and the implementation and testing of the measuring system. Since it is a single case, the findings are not generalizable but they indicate possible real uses and challenges of measurement implementation. The method used to guide the system implementation is called Measuring Innovation in Teams (MINT) (Nilsson et al 2010), which is a research-based framework that parallels the steps and areas suggested by literature as explained in section three. Overall, this paper draws its findings from the activities related to selection and refinement of metrics, and their implementation and use.

The implementation and results of the early steps of the measurement process were described by Benaim et al (2014b), which resulted in a picture of innovation capability. The validation of the initial picture and brainstorming of possible innovation metrics were explored through six workshops, involving 120 persons. The workshops involved iCoaches and ground employees from different departments since they were the target group. The suggested indicators were collected and listed. Afterwards, duplicates were merged and language refined. The selection was done in interaction with department members. For the metric implementation data was gathered by survey and direct input when applicable.

In addition to field notes, participant observation and the results documented during the workshops, the research data was collected by a survey that asked about the selection developed and whether the results were sufficient or useful to understand how the results impacted each department. A semi-structured interview followed in order to explore the survey results. In total, nine participants replied to the survey and five were interviewed, those numbers compose 50% of the teams involved in conducting the implementation. After the second round of measurement the results were discussed during a workshop with the implementation group (iCoaches) and the managers. Participants insights during and results from the workshop, such as changes in measures, implementation practices also support the findings described below. Complementary interviews were conducted with the executive manager in order to get more insights related to implementation challenges and general learnings.

3 THEORETICAL BACKGROUND IN INNOVATION MEASUREMENT

This section introduces theory and main elements related to innovation measurement systems. When talking about performance measurement from a managerial perspective, Chiesa et al (2009) list 7 objectives that are clustered in three main categories; diagnostic, motivational and interactive (learning and coordinating). In addition, measurement systems can be used to correct initiatives and implement strategy (Chiesa et al 2009; Godener and Söderquist 2004).

When it comes down to becoming innovative, what are the aspects that one should consider to measure? The suggestions are numerous (Björkdahl and Börjesson 2012; Adams et al 2006; Langdon 2008). Despite that the frameworks and categorizations have differences and nuances particular to each framework and its background, it is possible to find common elements. Often these elements are broken down in smaller subtopics until there is a (set of) indicator(s). For example, Adams et al (2006) in their literature review synthesize seven general categories and related subcategories: Inputs (people, physical and financial resources and tools), Knowledge management (idea generation, knowledge repository and information flows), Innovation strategy (strategic orientation and strategic leadership) Organization structure and culture, Portfolio management (risk and return), Project management (project efficiency, tools, communications and collaboration), and Commercialization (market research, market testing, marketing and sales).

3.1 What to measure in teams

When considering the team level the categories mentioned above can still be useful. However, what are the categories that are specific to team innovativeness? Some authors explore team innovation by relating it to team performance (Bain et all 2001; Sivasubramanian et al 2012; Hoegl and Gemuenden 2001). Performance is composed of concepts like efficiency and efficacy, and sometimes it includes speed to market. Efficiency relates to how well a team can deliver on budget and on time, and the efficacy relates to whether a team delivers what is expected of them (Hoegl and Gemuenden 2001). This relation is intermediated by teamwork quality, which is a construct that involves elements such as group cohesion, balance of member contributions, communication and coordination of activities (Hoegl and Gemuenden 2001). It can be argued that teams that have a high teamwork quality have a better performance; therefore they have a positive impact within innovation projects (Hoegl and Gemuenden 2001).

Another way to relate team performance and team innovation is through the concept of team climate. Weis et al (2011) find a positive relationship between team performance and innovation climate in resource-limited projects. Anderson and West (1998) outline the team climate for innovation in four factors: Vision, Participation safety, Task Orientation and Support for innovation, and later on adding reflexivity (West 2002). Innovation climate is also mentioned by Isaksen and Lauer (2002), where the authors suggest climate categories such as: challenge and involvement; freedom: trust and openness; idea time; playfulness and humor; conflict; idea support and risk taking. In addition, at the team level elements such as psychological safety and team diversity, among others, come into play (Isaksen and Lauer 2002; West 2002).

One aspect to take note of is that different kinds of teams have different correlations with innovation climate and, therefore, a particular climate characteristic may have a different correlation with innovation and performance depending on which kind of team it is measured in. For example, on the one hand, research teams had a positive correlation between elements like task orientation and support

in relation to innovation and performance. Meanwhile, NPD teams had a positive correlation for goal clarity and attainability of objectives (Bain et al 2001).

In a literature review about predictors of team level innovation, Hülsheger et al (2009) looked at team innovation in terms of input and process predictors. In the input category, the authors found a weak, but positive relation between traditional characteristics such as team size, diversity, team longevity. Also, they found a strong correlation between task and goal interdependence. The authors also found a strong relationship to the majority of the process predictors (Vision, Task orientation, Internal and external communication, support for innovation), a weak relationship for participation safety and a low relationship for task and relationship conflict.

A number of papers talk about individual characteristics and their implication on teams (Chen et al 2013). Some of them relate to how different cognitive styles influence teamwork (Miron-Spektor et al 2011), which may shed light on team composition indicators or possible actions around one aspect of team diversity. Openness is anther individual/group characteristic that can influence a team (Davison and Blackman 2005)

Another perspective is considering the innovation process at the team level. An innovation process has a number of stages (Langdon 2008; Gericke and Blessing 2012; Dewanga and Godse 2014) that could be used to measure team innovation providing timely assessment and feedback. It is important to understand what happens within the process, because each phase of the innovation process has its particular needs (Dewanga and Godse 2014; Langdon 2008). This perspective brings questions about how to measure the effectiveness of activities related to opportunity identification and analysis, as well as idea generation and selection.

At the team-level, all of these frameworks involve identifying antecedents, predictors and moderators, however the frameworks are not relating these characteristics to measuring innovation in teams. Furthermore, when it comes to measuring frameworks it seems that they are developed to follow up on results, or used to pinpoint the categories that should be explored without explaining how. One perspective we take in this work is that we aim to develop an innovation measurement system that includes ways to support teams to understand their context and to reflect on next steps.

3.2 How to measure?

Performance measures have been developing to go beyond audit and financial control measures. In its evolution, a number of frameworks have been developed that are useful to provide categories that are relevant to performance (Bourne et al 2003). The choice of an appropriate R&D measurement metric depends on the user's needs in terms of comprehensiveness of measurement, type of R&D being measured, available data and amount of effort the user can afford to allocate to the exercise (Adams et al 2006). That implies that innovation measuring systems need to be adapted to their context and possibilities (Bain et al 2001). So how to start?

We have synthesized five steps from the literature. The first step is: Choosing the approach. There are three primary ways of designing a measurement system (Bourne et al 2003). One is need-led, in which stakeholders and customer needs are put into focus. The second one is audit-led, in which a bottom up approach identifies the current status and needs challenging the status quo. The third is a model approach in which a model is used to prescribe the important elements to be measured. Another distinction is between a consultant-led and a facilitator-led approach. In the first, the consultant does most of the implementation, analysis and "follow up" work. In the second, the work is conducted more by the management (and team members) in collaboration with the consultant in a facilitating role.

The second step relates to the Set-up of measurement system. The alignment of the measurements to strategy is often mentioned as a relevant aspect (Neely et al 2000) Furthermore, for measurement to provide its potential benefit, staff needs to be involved in its design and implementation (Meyer, 1994; Hallgren, 2009). Bourne et al (2005) conclude that engagement in innovation performance provides a positive impact. An interactive use of measurement, where managers personally involve themselves in a frequent analysis dialogue and knowledge-sharing throughout the organization, needs to be encouraged (Simons, 1990; Bourne et al 2005; Nilsson and Ritzén 2014 p.185). Russ-eft and Preskill (2009) have suggested that an evaluation is likely to be used when: a) the intended use of evaluation is identified and planned at the beginning, b) the intended users of the evaluation are identified and prioritized, and c) stakeholders are involved in the process of evaluating.

The third step is about Identifying and using indicators. Integrate different classes of indicators is a strength of measurements systems (Neely et all 2000). Janssen et al (2007) find that the mix of

objective and subjective indicators help to increase the conceptual uses of the performance measurements, i.e. the increase the knowledge base used to support learning processes. One way to think about indicators is to connect them to the activities and outputs related to the innovation process itself. Dewagan and Godse (2014) suggest that innovation performance measurement systems have to support the identification of key KPI according to appropriate innovation dimensions. The distinction between results indicators (also know as lagging or past indicators) and indicators that determinants of results (leading or future indicators) (Neely et al 2000; Parmenter 2010). The former focus on diagnose and access performance. The latter focus on planning activities (Parmenter 2010).

The fourth step is: Data gathering, analysis and report. When analyzing how high performing units behave in comparison to average performing, Bourne et al (2005) find that high performing units gather data from different sources rather than only from the measurement system. For example, through observation in meetings and attention to dialogue and other interactions. In addition, communicating and reflecting about the results consistently (Russ-eft and Preskill 2009) is part of this step. "In high-performing business units, the simple control approach was used to verify performance at the end of the period, but the main drive for performance came from continual interaction with the performance data" (Bourne et all 2005). Therefore, in order to make the maximum out of measuring systems, active and continual communication, as well as, observation and interaction to check the information described on the system is a helpful practice. Within the case study an software "app" was used to display the gathered results electronically.

Finally, the fifth step is to take Actions and Re-evaluate measurement system. The measurement work doesn´t stop with reporting; Evaluating further needed actions is a next step. In high effective units action is taken according to the understanding of the problem, and it consider also multiple aspect of importance beyond the company targets (Bourne 2005). Moreover, measurement should be periodically re-evaluated and obsolete measurements deleted (Neely et al 2000).

Within the case study presented on this paper, the implementation and testing of the measurement system was based on the MINT Framework in an audit led way, with some characteristics of a model approach. Practically, it means that the implementation of MINT involves assessing and developing a snap shot of the current innovation capabilities, communicating the results and deciding on short and long-term goals and related measures, that will challenge the status quo, as well as, aligning the work with strategic intent and the envisioned ways of working more innovatively. The framework also considers that the indicators are dynamic and context specific (Nelly et all 2000). It includes several dimensions such as process, climate and outcome measures. However, the implementation process is not limited to these categories.

4   FINDINGS AND DISCUSSION

This section has reflections and observations about the implementation process trying to outline some of the implications. We highlight metric selection, the purpose and use of indicators, as well as, the role of leadership and empowerment. In addition, we also highlight a few other main challenges.

4.1 Metric selection

Overall 3 approaches to metric selection were identified. Some of the participants took a more experimental approach. 1) Some implementation team members pointed out that at this stage the implementation was seen as a test, and having one measurement was better than none. The idea was to practice and implement the measurement system and keep refining the metric. 2) Others suggested they have put some thought into it, and have considered which information would be relevant for them to know. 3) A few said it was difficult and their main question was how to make sure that the indicators give meaningful and desired result. We suggest that a balance between the first two approaches (test and relevance) is adequate. Trying to find the perfect indicator is difficult and can delay implementation. Overall, most participants were satisfied with their metrics. Some mentioned that some insufficiency was due to the low number of responses, and that gathering data from manager gives a small number of responses and it does not represent the ground level. The learning here is to remember to keep the connection to working levels.

4.2 Uses of the indicators

Four uses of the indicators were identified: 1) **To implement strategy - Promote a behavior** - A participant used the metrics to keep themselves in "check", reminding them to run the activities related to it. It is a drive force, "it keeps me going". It also helped to see whether the goals were achieved. Finally, it also supports manager to understand the role of iCoach and see progress. In addition by doing the proposed activity they were able to identify other challenges and learn about their assumptions. "We thought it would be easy to set small investigation –even if we had financing, we have not as much time". 2) **To diagnose - Monitor trend** – Some metrics were used to follow up activities, others to confirm an impression/perceived trend. In this case metrics were used to monitor an aspect that might be potentially risky to have low. For example, the department that selected a indicator like this has the impression that as time goes by there are less resources for need-finding and general external input. The idea here is to verify whether this impression is true, and raise a flag, if the trend is confirmed. 3) **To learn by experimenting with metric system** – Some of the participants were really taking the exercise as an opportunity to test working with measurement system (as pointed out in section 4.2). Here the approach is "lets try to use this opportunity and see whether we can make it work for us". 4) **To reflect on practice**: Another experimental learning aspect happened with the sharing and comparison of the results. During the first assessment despite participants looked mainly to their own scores. After the second assessment, a workshop was conducted for participants to debrief the results. Since in this case the indicators and scales were the same for all groups comparison was easy. A meaningful conversation started about the behaviors that lead to those particular results. Participants had a natural interest in those behaviors related to high and low scores.

4.2.1 The innovation indicator - small purposes and sufficient measure

Participants questioned to what extent an indicator can tell them how innovative they are. Indeed, most measures cannot answer this. Often they can only tell how one is performing in relation to one aspect that is relevant for being innovative. Hence, the importance of having multiple, small and specific purpose for the selected indicator, which should be related to a specific context.

In addition, a few interviewees reported that results were better than they expected, but still they didn't feel like they were being innovative. This then opened questions about what is a good reference point and sufficient target: "Does it mean that we are performing well or that we had low expectations?"

4.3 Metrics and indicators content

The metrics content selected by the teams and departments in focus related to time for exploring ideas, costumer and external connections, and climate and management support according to their needs as reported by Benaim et al (2014b). Some examples are metrics related to unplanned time, number of customer visit or number of cross-function meetings. These metrics are related to climate and contingent aspects of innovation.

Metrics connected to the idea management platform (Benaim et al 2014a) focused on number of ideas and the idea's development stages (gates) within the platform. One indicator was selected to track the formation of groups to rapidly explore ideas. Attention was also placed on measuring the spread and awareness about the innovation channels among employees. For instance, a metric asked about the clarity of the innovation process, and whether employees knew where to look for clarification. Output measures, such as number of new features incorporated in products, and articles published were also measured. Such indicators start to address process related dimensions.

There is a strong selection of indictors around innovation budget distribution, as well as, indicators for number of projects dealing with a higher percentage of innovative features; a few indicators about the alignment between project and strategy were selected. These indicators can speak to portfolio and strategy alignment.

The focus on general and higher level indicators that focus on department or organizational level is noticeable; such change is discussed in section 4.5. So far, only two measurements were performed, and a few uses could be outlined (see 4.2), however, little can be concluded about the impact of the selected metrics. The impacts and changes promoted by the use of indicators as well as the changes in the indicators themselves should be followed in a more detailed and longer study, in which the relation to innovation capabilities should be in focus. Up to the second measurement small changes were made

to the wording of the indicators to achieve clarity and a more standard set between departments was selected to allow comparison.

4.4 Leadership and Empowerment

The literature quite often mentions leadership and empowerment as an enabling factor for teams to perform. In the case company, this is also noticeable in the amount of work that management and academic partners do behind the scenes to create the setting. They are in constant interaction with top management clarifying questions, reporting progress and making the overall case for innovation and its measurement. The metric implementation management team also played an important role creating psychological safety and empowerment within the team. One example is in the last workshop when participants were directing their questions to the executive manager regarding what their task and deliverable was. Participants were asking what management expects from them. The reply was "what is it that you want to tell the management". Despite that it has been mentioned a number of times that the indicators are supposed to be "what is relevant for the team" they still needed clear leadership and empowerment. Moreover, the project management is also important given the physical distance between participants and the little time they have in their stretched routines. It helps to keep the dynamic and timing going creating the space for measurement and discussion to happen.

4.5 Challenges

We could identify at least 3 challenges selecting and implementing the measurements in this case. The organizational level in focus, legitimation of the exercise, and the use of the visualization tool. In relation to the level in focus: The measurement system was going to be implemented at the project team level; however, executive management changed this orientation to department level. The main reason was that employees work in several different projects on several different sites. Therefore, measuring project teams would become very complex and scattered; some teams are the same for weeks and others are for some years. Some teams are small, co-located and focused, while others have many team members across the globe. In addition, departments are led by line managers that are reporting to directors and the directors to top management. By having the assessment on department level it is possible to get hold of the departmental working climate and one can see how well line managers are encouraging their employees to think outside the box and look for new solutions. The frequency of measuring also supported the level change since measuring something two times per year would not make a difference for most of the teams. Open questions for further research are: Is it enough to have metrics on department level? And, is it actually impractical to measure teams?

In addition, the multiple goals and responsibilities of the supporting group might have been a problem in defining the focus. From being a support group doing activities to promote innovation climate, they became responsible to promote and monitor activities on the idea management platform. At the same time they are also responsible for measuring their departments, on top of their design-engineer work. Within such a broad scope all measurement seemed to make sense, and group boundaries got blurred. Perhaps a clear focus on defining the team boundaries and specific purpose could have been helpful. It is interesting to note that the product planning department has overall and more organization oriented measurements. The responsible reported they reached a personal conclusion that very few indicators would say how innovative they are. One example of such an indicator is number of features adopted into products. In fact that conclusion might be true and relevant for their level of measurements, it shows a reflection and understanding of their innovative goals. However, other groups/departments might require different indicators that are more closely related to their work.

Legitimacy and engagement of management was also a challenge is some cases. Despite of some strong support of members in top management, other would not see the exercise as a priority or relevant. The same was true for the layer of management underneath, which sometimes was required join meeting with top management to show that the initiative was supported. In addition, managers would seem to be more inclined to support the exercise according to position of their managers. This is another reason to move the responsibility of measures a few layers above project teams.

Finally, in relation to sharing information, very few used the tool support to do their report, and the input on the app was done because it was "mandatory". Challenges with the software were not surprising; in a workshop participants pointed out that more training and a few adjustments in the app would have done the trick. Some of the challenges of the app were described as: a) Frequent app crash, b) Visualization of correct quarter and year was not intuitive - One had to be careful to display the

right time frame, c) The tool was not ready to use - wi-fi connection and log-in problems prevented immediate access, d) Infrequent use makes hard to remember how to use it, e) Aggregation on hierarchical layer had problems. Participants used their own spreadsheet to follow up, because it allowed making notes and other details next to the data that relate to a particular result.

Results of the implementation were shared with managers. In some cases data from two departments were gathered together, managers presented with the country result asked to have beyond the country data, the specific of their departments. Their reaction was to take in the information. And beyond that a few asked for the next steps. A question for exploration is: How to define and act on those steps?

5 CONCLUSION

The uses of indicators show potential for the metric system to achieve its function. In terms of practical implications our findings reinforce the need to select smaller purposes for the measurement. There is an indication for the need to hold more than one level at a time, making metrics relevant for the teams, as well as at the management level. Regarding implementation, strong leadership and dialogical skills are key within large companies to engage and overcome resistance to change, including political issues are often a big factor. Engagement of managers proved was also a stepping stone for the implementation to happen. However, it seems that one cannot wait to have a buy-in and that have something on the ground is a way to secure its continuity. The next steps are to consolidate the groups being measured, and explore how these indicators can be reflected into action. Further research could explore the contents of the metrics and its rationale and implications, as well as, whether the measurement actually promoted insights and behavioural changes that impact the ambidexterity in terms of innovation process and climate. Further research can also explore whether team innovation metrics should be developed after or in parallel to an organizational level approach.

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