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MEASURING FOR INNOVATION

- a guide for innovative teams

by

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PART 1
INTRODUCTION

PART 1 PROVIDES AN INTRODUCTION TO THE ARTICLE, WHAT YOU CAN EXPECT FROM IT, INFORMATION ABOUT THE AUTHOR, A SHORT SUMMARY INCLUDING SOME BEST PRACTICE EXAMPLES.

About this article

Applied Innovation Management™ is a series of articles for innovation management practitioners created in collaboration with experts in the field of innovation management from leading companies, business schools and universities. This article discusses the need for measuring your innovation efforts and will provide you with new knowledge and a framework which will guide you and your team in establishing an innovation measurement program.

As innovation is a necessity for any organization today, the ability to assess and measure the progress and impact of your innovation efforts might be a true source of competitive advantage. In this Applied innovation Management™-article you will be provided with a framework which will guide you and your team in establishing an innovation measurement program. Once a suitable innovation measurement program has been implemented, the innovation capabilities of your team, as well as the confidence from both internal and external stakeholders will increase.

THIS IS WHAT YOU CAN EXPECT FROM THIS ARTICLE

This article provides you with fresh experiences, best practice and insights from how a number of multinational companies within the MedTech, telecom and manufacturing industries are working with establishing and implementing innovation measurement programs. It will enable you to:

- **get a basic** understanding of both the problems and solutions connected to creating and implementing an innovation measurement program in your organization
- **achieve improved management** and team discussions by providing a common ground and a common language for creating and implementing an innovation measurement program
- **better reflect on** the structure of your company in the context of innovation and how to take action to create organizational processes that improve the innovation capabilities
- **prepare for the** challenges in making your organization more innovative
- **identify the vital** steps that need to be considered when designing and implementing an innovation measurement program in your organization

Welcome to the Forum

The InnovationManagementForum.com provides a platform and channel of communication exclusively dedicated to innovation management. You are also invited to discuss questions that you might have about how to implement the knowledge presented in this article in your organization. This is a valuable opportunity to exchange experiences with likeminded and with colleagues from around the world. The author of this article will also take part in these discussions.

➡ www.innovationmanagementforum.com (open and free for everyone)

About the authors

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FREDRIK NILSSON ON INNOVATION MANAGEMENT

Why should organizations improve their innovation management skills?
– The competitiveness of companies today is highly dependent on the ability to be innovative, i.e. constantly exceeding customer expectations, and challenging competitors. Innovation is a strategic area and many companies still suffer from a lack of procedures in measuring and assessing innovation activities.

Why are you interested in innovation management?
– The future entails huge challenges for industry, healthcare, and whole areas of society. From our perspective innovations are in a necessity in making future developments sustainable and in meeting the needs of our society.

THE
KNOWLEDGE

IN BRIEF

Experience constantly tells us that "What is measured, gets done!". However when it comes to innovation the measurement indicators available are rarely useful. The classical indicators are made for follow-up at best (e.g. number of patents or ideas) while indicators used for driving innovative activities are absent. When developing products and services for a marketplace it is important for any organization to create innovative features and solutions in order to achieve an advantage over its competitors.

This article focuses on the assessment of innovation capability at team level in relation to the processes which takes place before actual product development projects are decided; when new business models, technological opportunities and intellectual property rights are created and investigated.

A measurement framework called MINT (Measuring Innovation Capability in Teams) is provided, focusing on four areas: innovation elicitation, selection, impact and ways of working. For each area, candidate measurement indicators are provided to be used as inspiration in the development of a tailored measurement program.

It is important to characterize not only what is easily measurable, but also aspects which are inherently subjective and difficult to describe quantatively. Candidate measurement indicators thus include examples of both hard numbers and soft, subjective judgments. The MINT framework has been developed mainly for teams responsible for innovation within various organizations but may also be of inspiration for departments and divisions aiming for increased innovation capabilities.

IN PRACTICE

The MedTech company had recently stated its mission to catch up with market leading competitors when the MINT framework was introduced to it. Although the methodology was really in its initial phase the company was brave enough to try it. Today it has extended its measuring of innovation to include not only results but also actions. The MedTech company applied the framework in one R&D division in the company and utilized it at its best: to include team members in the process of identifying indicators which relate to actual improvements in innovation processes at the division.

A workshop was performed, indicators were suggested. These indicators were processed, taking into account the fact that indicators should not only reflect needs indentified for improvement but also that indicators should be measurable and numbers of indicators should be limited. Thereafter, a measurement system was outlined. Indicators such as Number of invention disclosures and Number of patents were complemented by indicators such as Number of innovation teams, Number projects failed, and Individual time on innovation work. Today, these indicators are goals set on a yearly basis and measured quarterly. Every quarter the actual outcome is analyzed in relation to the goal and actions forward are outlined.

PART 2
UNDERSTANDING THEORY & BACKGROUND

PART 2 PROVIDES A DISCUSSION OF SOME OF THE
CHALLENGES RELATED TO THE SUBJECT OF THIS ARTICLE.
IT INCLUDES EXAMPLES AND A THEORETICAL FRAMEWORK
FOR UNDERSTANDING THE MECHANISMS RELATED TO THE
CHALLENGES OF INTRODUCING AND IMPLEMENTING AN
INNOVATION MEASUREMENT PROGRAM.

How do we know that we are innovative?

The innovative team

The MINT compass

Method

HOW DO WE KNOW THAT WE ARE INNOVATIVE?

How do we know that we are innovative? This question was asked by a manager of a software development team with the explicit responsibility of creating and analyzing innovative product features before actual product development projects are started. Similar questions have been raised in many other organizations as innovation has gone from being something 'nice to have' to representing an essential necessity for profitability and survival.

For many companies there has been a paradigmatic shift. Just a few decades ago markets were relatively stable and companies provided products and services to the market, focusing on continuous improvement and quality issues regarding their operations. Companies were the providers, and customers could choose from what was offered, i.e. a classic push strategy. This made planning horizons quite long and products could be incrementally improved until new developments or breakthroughs in technology were realized. In such contexts, measurement programs focused mainly on operational efficiency as it provided feedback quite quickly and measures could be taken to improve the process at hand. Consequently, the internal context was the scope for many of the efforts which led to company success.

Due to several factors, e.g. globalization, information and communication technologies, changes in customer behavior and demands. etc., the situation is different today. Market forces and changing consumer demands determine the success or failure of a company. With increased competition, product and service life-cycles have been shortened and the need for innovation is growing (Drucker, 2002; Tatikonda and Rosenthal, 2000; Tidd and Bessant, 2009). However, as opposed to operational improvement, in the early phases of any innovation process, there may be a long lead time to feedback from initial concept invention to a response from customers regarding market success (or failure). Nevertheless, managers of teams which work with the conceptualization of novel products and service ideas need to steer innovative work in the right direction before market feedback is given.

The above mentioned question of determining innovation capability in predevelopment activities was the starting point for a research effort resulting in the framework for Measuring Innovation capability in Teams (MINT) (Regnell et al., 2008), presented in this article. Our interpretation of innovation includes not only a creative, radical idea but also that the idea is implemented in products and/or services and results in recognized, novel, and significant value for its users. In line with this interpretation we use the term innovation capability to imply the capacity of an organizational entity to create novel product feature concepts which are successfully incorporated in product development,(eventually) creating significant value for product stakeholders.

The question of how to measure the innovative capability of a team leads to the follow-up question: What aspects of innovation capability can be measured? Innovation capability is a multifaceted phenomenon which includes individuals' skills, teamwork, organizational aspects, as well as specific properties of the domain in which the innovation is carried out. Several issues are "soft" and related to human judgment and it can be assumed that an assessment of innovation capability needs the inclusion of subjective evaluation which incorporates not only quantitative data, but also qualitative data from individual views. Subsequently, we thus use the term measurement in a broad sense, also in-

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cluding subjective, qualitative assessments using nominal and ordinal scales in addition to objective, quantitative numbers on absolute and ratio scales.

THE INNOVATIVE TEAM

The innovative team represents an organizational unit which has a specific focus to develop radically new products or features for future markets which may enable the company to meet future competition rather than just deal with current competition (see figure 1). Other parts of the company may have teams which work with normal product development, targeting incremental improvement of existing products, while the innovative team drives special projects with higher risks and often longer time horizons. The innovative team operates in an internal context representing the rest of the company. The internal context also encompasses soft aspects such as company values, culture, and history of the organization. The innovative team is provided with input in the form of goals and assignments, and also with input resources such as competent employees and an accompanying budget to ensure accomplishment of the goals. The output can range from novel features of products to new ways of doing business, i.e. novel business models. Finally, the team acts in relation to an external context including markets, competitors, and society, from which behaviors and trends can be observed.

DIFFERENT TYPES OF INNOVATIVE TEAMS

The innovative team can be organized in several ways as we have found in our research. In small companies the innovative

"With increased competition, product and service life-cycles have been shortened and the need for innovation is growing"

FIGURE 1 *Conceptual model of the context for the innovative team.*

External Context

Internal Context

Feedback

Input   INNOVATIVE TEAM   Output

Organization, products, history

Market, customers, society

FIGURE 2
The MINT framework

2. Project Selection
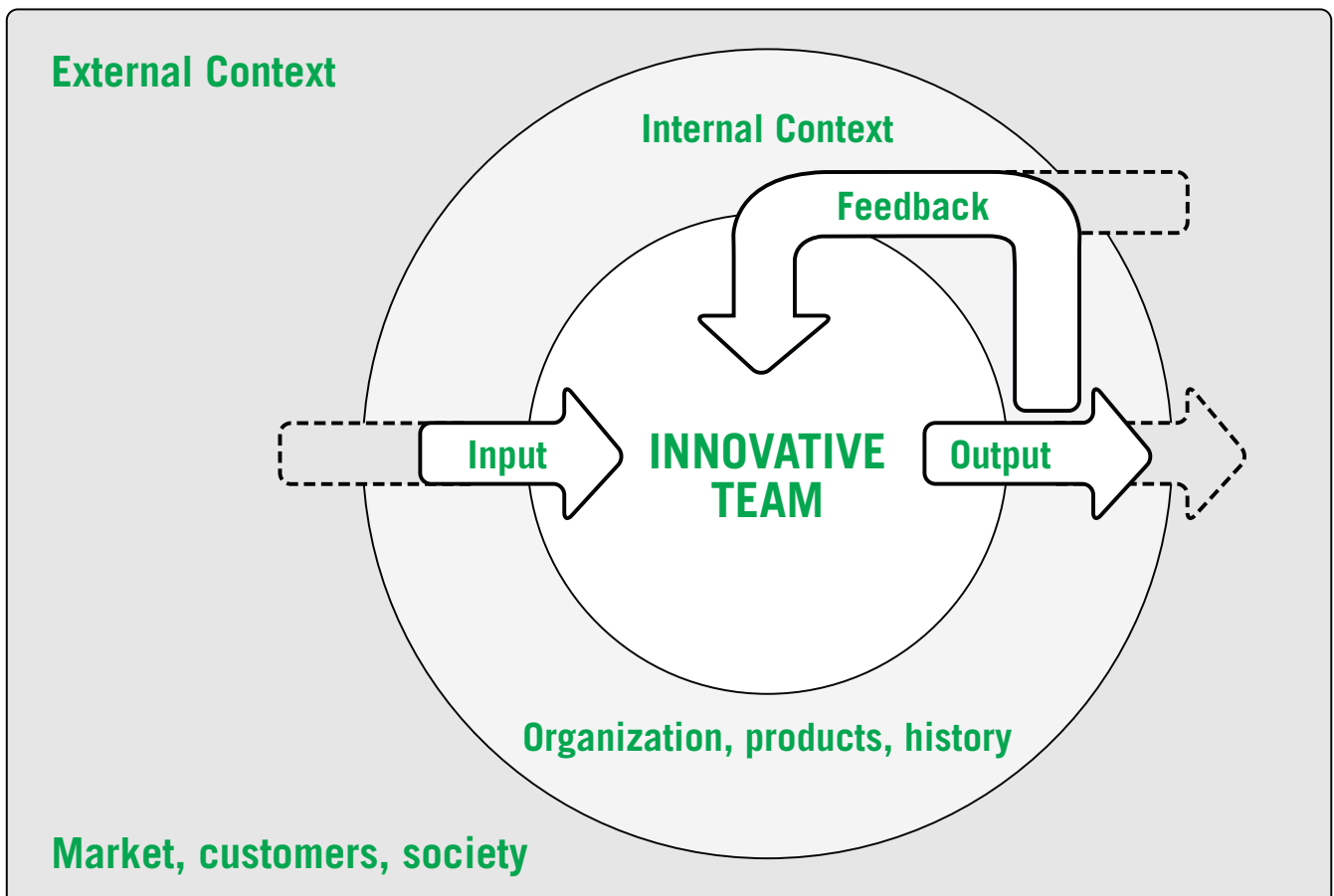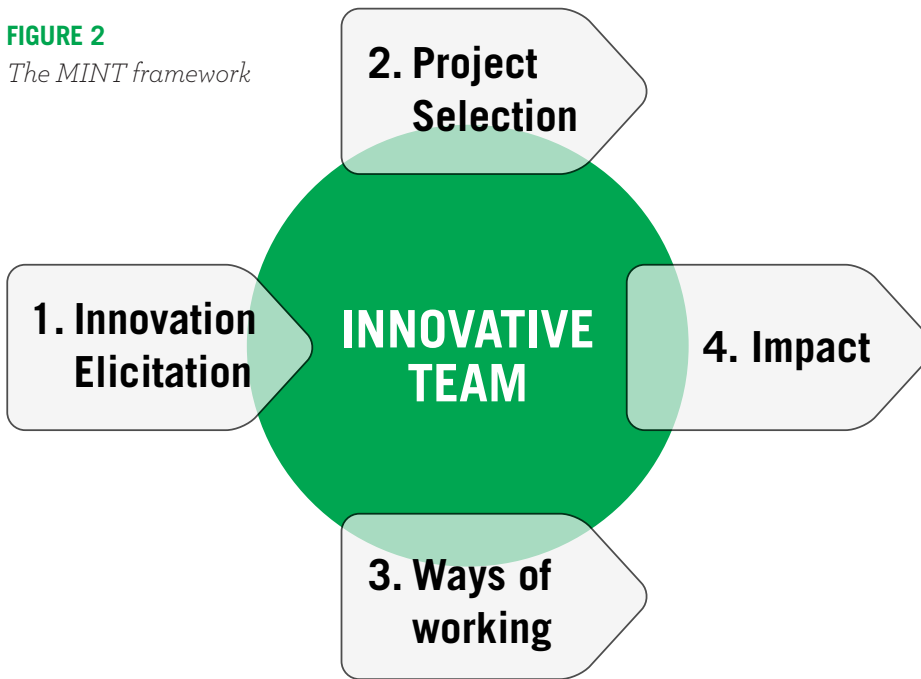
1. Innovation Elicitation

INNOVATIVE TEAM

4. Impact

3. Ways of working

"The MINT framework put in practice is similar to the balanced score card, i.e. it is a performance management tool"

team is likely to be the whole management team. In larger companies specific groups can be assigned the task of providing novel innovations to the rest of the organization; product and service development could then finalise development and get the modified suggestions into the market place. These teams can be permanently or temporarily used for specific tasks when it is deemed necessary.

Temporary teams we researched consisted of 4-6 people working on a new or different solution or product over a period of 4-6 months. Another organization used dedicated persons in order to find novel ideas and solutions among its 30,000 coworkers. It used the term innovation scouts and with a core team of 8 people together with 25 innovation scouts the company's innovation strategy was established.

MINT

The main contribution of this article comprises the empirically based three-level framework denoted MINT (see figure 2). The MINT framework is aimed at organizations considering assessment of innovation capability on team levels. Its measurement areas, factors, and candidates are intended to be used as inspiration material a customized measurements program is being developed. The MINT framework is addressed to managers and team members in order to increase their awareness and innovativeness of their processes and activities.

The MINT framework will at least provide two very beneficial aspects:

1. The innovativeness of the team will increase as members' involvement:
- in setting short- and long-term goals,
- in deciding on more or fewer radical projects and
- in finding new ways of coming up with innovative ideas

will improve the innovation processes as well as outcomes and impact.

2. In the internal context, i.e. within the company or organization, the use of the MINT framework will provide accountability and validity for the teams and divisions working with innovation. In our case studies it has been found that the work being done by these innovative teams is often under pressure. In good times top management may support the establishment of innovative teams and dedicate resources for these teams which enable them to work on, e.g. radical ideas and new business models. However, in times when cost reductions are at the top of the agenda, the legitimacy of the teams is sometimes challenged. If no clear benefits, short- or long-term, can easily be proven, it is simple to cut costs by transferring team members to more direct revenue-enhancing efforts within the organizations. Experience and research show that top management must show long-term dedication to set aside resources for innovation in order to establish a lasting organizational capability to innovate (Davida et al. 2006).

The MINT framework put in practice is similar to the balanced score card (Kaplan and Norton, 1996), i.e. it is a performance management tool. Its four innovation areas (Innovation Elicitation, Project selection, Ways of Working, and Impact) provide a balanced view of the innovation process and its outcomes. For each innovation area innovation indicators are first selected and then targets are set for each one of them. This process should involve the whole team or department as engagement and alignment are critical to the success of any implementation.

As a result, as team members feel that the measurement program is relevant for the development of their innovation process, the program is given dedicated implementation support by the team. Consequently, the internal motivation within the team to be innovative is a powerful driving force which should be used (Katzenbach and Smith1993). Furthermore, the result of any innovation process, if handled correctly, is always greater knowledge and increased competence for coworkers involved. The value in trying something new or doing something differently might therefore be as beneficial for long-term success as if the actual product or service in focus really becomes an innovation. However, for the innovative team, appropriate measurement indicators are also necessary for this to happen. In line with this observation, the focus of the MINT framework is primarily on benefits to internal teams and secondarily on external validation.

THE MINT COMPASS

When using the MINT framework as inspiration for a measurement program, it is important to connect what is being measured to the improvement goals of innovation capability. Consequently, similar to how a balance scorecard starts by setting the direction of any strategic initiative, a tool called the MINT compass has been developed in order to set the direction for the innovation initiative for a team or division. The MINT compass is the first step in transforming general goals and initial measurement of innovation efforts into concrete and operational goals that which the team should strive toward. We have found that the phase of using the MINT compass comprises three steps for each selected goal:
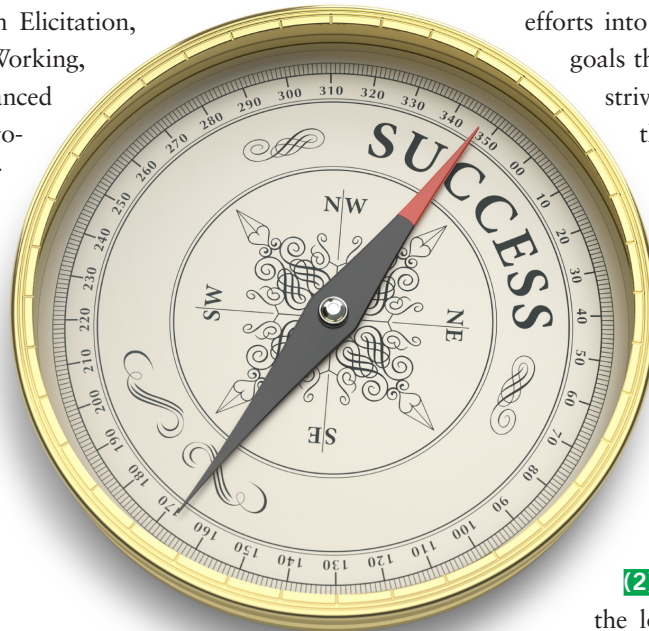
(1) **Where are we now?** Establish an estimate which characterizes the current situation in relation to a selected goal;

(2) **Where are we going?** Set the long-term direction by assigning a target value for the selected goal to be achieved within a defined long-term period, e.g. after two years;

(3) **What is the next step?** Agree on a short-term, target value for the selected goal which can be evaluated in, e.g. three months.

Without these steps there is a tendency that the selection of measurement indicators based on general goals and visions becomes too difficult. In the end it will not be aligned to what the team really does and what its starting point is.

METHOD

We have researched innovation capability through qualitative analysis of semistructured interviews with team members of teams with specific responsibilities of innovation for future products in five organizations. The coding of the interview transcripts was input to a brainstorming session where innovation capability measurement candidates were defined and then grouped and structured into a three-level framework. The detailed research questions which led to the design of the interview study are elaborated on in the theoretical background. Validation of the framework is based on feedback from practitioners and a detailed cross-case analysis including the different organizations.

PART 3
METHODOLOGY & PRACTICE INSIGHTS

PART 3 PROVIDES SOME SOLUTIONS AND SUGGESTIONS ABOUT HOW TO DESIGN AND ESTABLISH AN INNOVATION MEASUREMENT PROGRAM. THE SOLUTIONS ARE BASED ON A THEORETICAL FRAMEWORK AND BEST PRACTICE INSIGHTS FROM INITIAL EXPERIENCES AT A NUMBER OF MULTINATIONAL COMPANIES WITHIN THE MEDTECH, TELECOM AND MANUFACTURING INDUSTRIES.

Approaching innovation measurements

The MINT framework

Mistakes we learnt from

Approaching innovation measurements

At the end of the day, the external context will determine if your team or organization is innovative or not. It is customers and users who decide if new products or services are of any value and can thus be seen as innovations. Until then we can only talk about potential innovations.

Nonetheless, while sales volumes and product margins are ways of measuring certain factors when products and services are on the market, the innovative team needs understanding and knowledge of what potential needs future customers might require and value. This is important in every phase of the innovation process and needs to be reassessed several times in order to ensure success. Measurement indicators which reflect both processes and outcomes are and will be central to innovation.

The amount of literature on innovation is vast and goes back many years. However, while there has been much focus on innovation and innovation capabilities on an organizational level, i.e. innovation processes, as well as on the individual level, i.e. intrapreneurship or corporate entrepreneurship, less focus has been placed on a team level. The same is true for measurement and assessment methods of innovation and innovation capabilities. Furthermore, a majority of innovation metrics focus on product or process performance and are of a post-hoc character, i.e. when products put on the market or processes are put in practice. Popular performance innovation metrics in industry are percentage of revenue from new products (NPs), percentage of growth in NPs, overall profits generated by NPs (Cooper et al, 2004). Other popular metrics include the number of patents granted or filed and number of ideas in the "suggestion box."

Measuring the innovative climate for working groups is something Anderson and West (1998) address. This is the only reference, to the authors´ knowledge, which emphasizes measurement of innovation on a team level. The authors present a multidimensional measure of facet-specific climate for innovation in groups called Team Climate Inventory and stress that "most previous measures of [innovative] climate have evaluated organizations as a whole" (ibid.). They conclude that by focusing on specific aspects of climate and specific group level outcomes predictive accuracy is high.

Other sources provide different aspects and dimensions of innovation measurement and assessment. One of the most comprehensive sources is the review by Adams et al. (2006) on innovation management measurement indicators. Based on their review a framework of seven areas for measurement of innovation is provided. They point to the need for both practitioners and academics to measure innovation, and stress the absence of frameworks for innovation management measurement indicators as well as "the relatively small number of empirical studies on measurement in practice" (ibid. p.38). Griffin and Page (1996) argue that a firm can assess the success or failure of development projects by using appropriate sets of measures to align with project and innovation strategies.

The framework presented by Griffin and Page is relevant when products are placed on the market, i.e. post-hoc measures (e.g. customer acceptance, market share goals, competitive advantage), and mostly provides insights into innovation on an organizational (corporate) level. The same measurement focus can be found in Huang et al. (2004), i.e. on corporate levels and on post-hoc measures. Based on their study on the measurement of new product success in Australian small and medium sized enterprises, it is concluded

"The MINT framework is intended to be used as inspiration and guidance when a customized measurements program for assessing and improving innovation capability is developed."

that firms should use multiple criteria when measuring the success of new products. The most contributory factors to customer success in their study were found to be customer satisfaction and customer acceptance; post-hoc measures.

Davila et al. (2006) present another view, based on a business model for innovation with appropriate measures based on four phases; input, process, output, and outcome. For each of these phases they present a plethora of measures. They also define three roles of measurement systems; plan- involving designing and monitoring strategy; monitor- tracking of execution efforts and performance evaluation; and learn- in order to identify new opportunities.

The framework they provide shows similarities with the MINT framework on the phases of measurement. Chiesa et al. (1996) present a framework for technical innovation audit. Their framework consisting of four core processes: (1) the identification of new product concepts – concept generation; (2) taking the innovation from concept to launch – product development; (3) the development of innovation in production – process innovation; and (4) the development and management of technology per se. In addition, they define three enabling processes: (1) resources – the deployment of human and financial resources; (2) system and tools – the effective use of appropriate systems and tools; and (3) leadership – providing top management leadership and direction. However, the focus in both Davial et al. and Chiesa et al. is mostly on an organizational (corporate) level, so that team-level innovation measurement on climate, processes, and performance is not explicitly addressed.

Other literature on measurement of innovation extends the main stream focus on product and technology by addressing other innovation areas such as service innovation, aesthetic innovation, and the measurement

thereof. For example, Alcaide-Marzal and Tortajada-Esparza (2007) approach innovation and the assessment thereof in industries which are not focused on technological innovation but instead/rather on aesthetic innovation. In their review of innovation surveys they especially investigate the occurrence of the following aspects; goals of innovation, inputs to innovation, outputs of innovation, innovation diffusion, and aesthetic design. Hipp and Grupp (2005) focus on service innovations and state that "Scientific research in measurement methods and indicator creation describing service innovations and their effects on the economic, technological, and social environment has only just started" (p.530).

THE MINT FRAMEWORK

The MINT framework is intended to be used as inspiration and guidance when a customized measurements program for assessing and improving innovation capability is developed. The MINT framework is comprised of three levels: measurement areas, measurement factors, and measurement inspiration, subsequently described in Fig. 3 and the Do it yourself section (p. 19).

1. Innovation Elicitation. This area consists of measurement inspiration related to activities which are devoted to identification of ideas for innovation projects. The area is divided into factors which depend on whether ideas are actively generated or collected from existing resources, as well as if they originate from internal or external stakeholders. The ideas elicited are the basis for project proposals for the innovative team. Feedback on the proposals is important for stakeholders so that they can see that their proposals are considered.

2. Project Selection. The project proposals which are considered best are chosen, and innovation proj-

FIGURE 3 *The first two levels of the MINT framework: areas and factors.*

Timing, risk and size
Internal Stakeholders
External Stakeholders
Return on investment

2. Project Selection

Internal Generation
Internal Collection
External Generation
External Collection
Feedback

1. Innovation Elicitation

INNOVATIVE TEAM

Product Features
Interaction
Trust
Intellectual Property Rights
Standards and Practices

4. Impact

Process
Innovation Climate
Incentives
Competence
Organization
Process Improvements

3. Ways of working

FACTORS

AREA

"The use of the MINT framework will provide accountability and validity for the teams and divisions working with innovation"
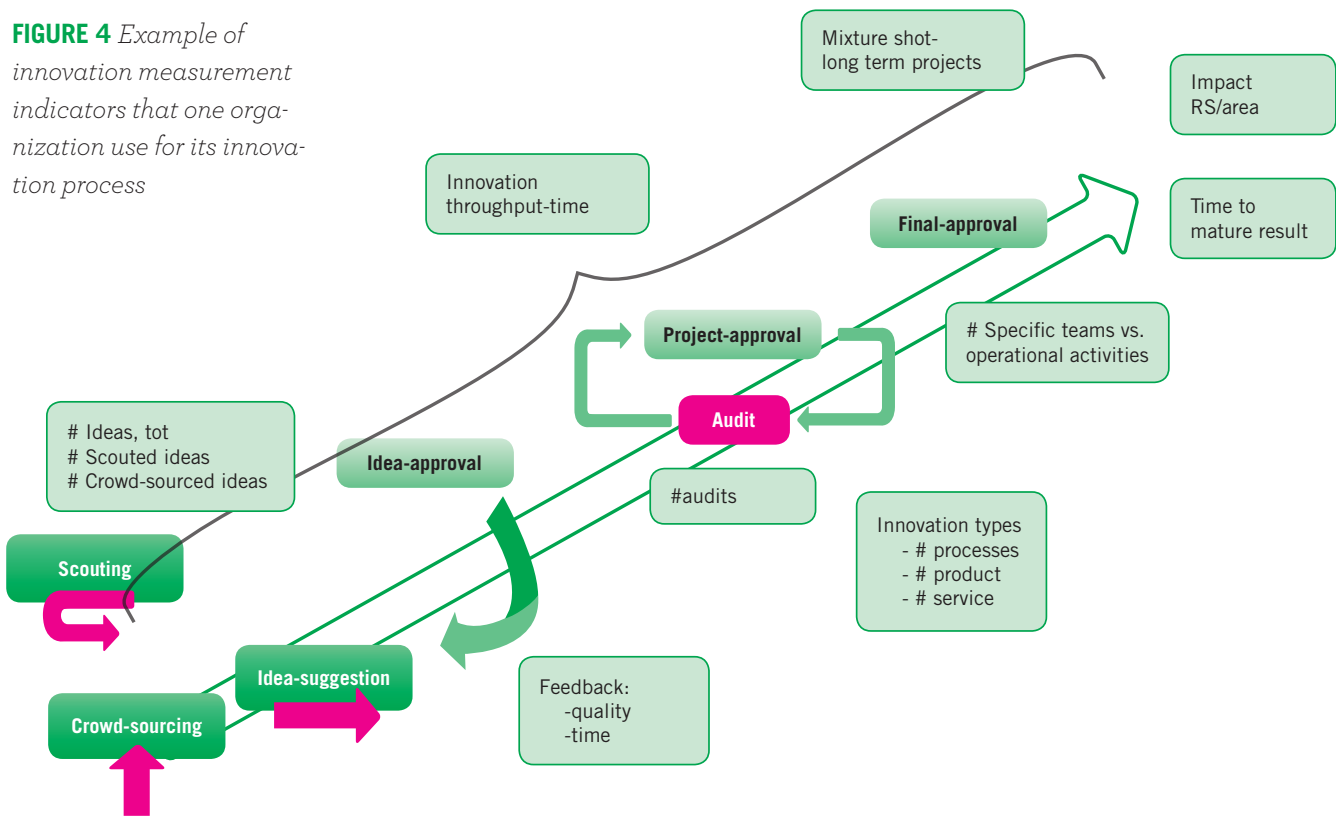
ects are started for proof-of-concept and prototype development. Different criteria can be used in project assessment, including, e.g. risk, effort needed, and time horizons for when the market is estimated to be ready for the innovation. By choosing a mix of projects with different characteristics with respect to such criteria, a balanced project portfolio can be created which may provide beneficial variation of innovation types and increased chances of success in innovation work.

3. Ways of Working. This factor concerns the ways of working of the innovative team; it includes the process of innovation projects as well as organizational abilities related to competence, the innovation cli-

mate in relation to the team's group dynamics, and continuous process improvement.

4. Impact. In order to realize a great idea and make it an innovation, it needs to be handed over to, and nurtured, by the normal product development organization, where product-grade quality can be achieved through systematic implementation and quality assurance. The innovative team members act as ambassador for the results of the project and communicate the benefits in order to explain why further development efforts should be allocated. The overall goal is to have a beneficial impact on, and a renewal, of the whole organization and its business.

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FIGURE 4 *Example of innovation measurement indicators that one organization use for its innovation process*

Mixture shot-long term projects

Impact RS/area

Innovation throughput-time

Final-approval

Time to mature result

Project-approval

Specific teams vs. operational activities

Ideas, tot
Scouted ideas
Crowd-sourced ideas

Idea-approval

Audit

#audits

Scouting

Innovation types
- # processes
- # product
- # service

Idea-suggestion

Crowd-sourcing

Feedback:
-quality
-time

"The recommendation is to start with a handful of indicators which complement output measurements."

THE MINT FRAMEWORK IN PRACTICE

The MINT framework has been applied and used in several organizations such as Sony Ericsson, Volvo Aero, Region Skåne, Lund University, and St. Jude Medical. Above is an example from one of the organizations (see figure 4). In the middle is the illustration of the organization's innovation process starting with three different means of getting ideas; scouting, idea suggestion, and crowdsourcing. Idea suggestion is the classical process of providing the innovation group with improvement suggestions and product ideas. Scouting is an activity which a group of 25 people in the organization performs in order to find and discuss (with creative people, disappointed patients etc.) what could be done differently or what new features are wished for.

Crowdsourcing is an open innovation-inspired IT platform on which employees can post issues and problems and the rest of the organization can provide perspectives and solutions in order to elicit more ideas. Then there is a process of approval levels before the products or services are realized through product development or service development processes. The surrounding depictions represent measurement factors derived from the MINT framework. These measurement indicators are chosen to monitor and drive the innovation process from idea to realization with impact and time to mature result as follow-up measures.

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MISTAKES WE LEARNT FROM

1   **Measurement is only** a means not an end - Measuring, whether it is innovation or something else, cannot stand alone as an activity. Measuring is a function which needs to be linked to a certain strategy or goals. MINT therefore needs to be put into context in a company and be related to corporate innovation strategies. MINT on its own does not define what changes to make in order to increase innovation capability; neither are goals set without great care from the people in the process. We have experienced workshops where people participating have too little insight into what they mean by innovation capability and what they need to change to increase it. In such cases MINT needs preceding actions to become efficient; specifically, a common sense of changes needed in order to increase innovation capability within the team.

2   **For best results,** focus the efforts of a team - MINT is related to teams for strong reasons. Creating an innovative team is a common action within innovation programs, and teams are often more or less autonomous in today's companies. Consequently, teams cannot be managed top down but rather they need to define their own actions. Actions need to be followed up on, resulting in indicators related to process; often complementary to measuring output from teams. It could also be the case that innovative teams need to communicate their work and progress internally in the company, since actual results from innovation affect success on the market and can demand long time spans. Teams should carefully consider what indicators are chosen and let this influence how they define them.

3   **Do not measure** everything - In the eagerness to establish measurement methods for innovation, and with many purposes, it is easy to end up with too many measurement indicators, and also forget that measuring is a new activity requiring certain efforts from people involved. With too many indicators prioritization of which activities to conduct is overlooked and the support for action and change; the main purpose of MINT, is not fulfilled. The recommendation is to start with a handful of indicators which complement output measurements. Every indicator should be chosen so that there is a reasonable amount of work needed to collect data, and so that progress can be illustrated in a reasonable amount of time.

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PART 4
USING & IMPLEMENTING THE KNOWLEDGE

PART 4 INCORPORATES A SERIES OF SUGGESTIONS & ADVICE THAT WILL HELP YOU USE AND IMPLEMENT THE KNOWLEDGE GAINED FROM THE PREVIOUS SECTIONS, IN YOUR OWN ORGANIZATION. THE ADVICE ARE FOLLOWED BY COMMENTS FROM THE AUTHOR. THE ADVICE AND COMMENTS CAN BE USED AS GUIDANCE TO HELP YOU REFLECT ON AND FIND SOLUTIONS TO QUESTIONS THAT YOU NEED TO WORK WITH WHEN IMPLEMENTING THE KNOWLEDGE IN YOUR OWN ORGANIZATION.

Reassess your innovation strategy based on the first level of the MINT framework

Bring your team together to establish both short and long term innovation goals and achievements.

Develop a measurement model which captures prerequisites for innovation for your team

Assess the innovative team

Use the MINT framework for inspiration measurement indicators

Refine your short and long term innovation goals

Use your tailored measurement program for encouragement of innovation, for feedback and for communications

DO IT YOURSELF

To the manager of a team or division with which aspires to increase its innovation capabilities the following seven steps are suggested. It is though important to point out that this step-wise presentation provides a general progression of the work. In reality during implementation you should carefully consider when it would be suitable for you to iterate and reflect. Hence, the model should not be seen as linear but rather cyclic.

1 REASSESS YOUR INNOVATION STRATEGY BASED ON THE FIRST LEVEL OF THE MINT FRAMEWORK

As explained to Alice by the cat (in Alice in Wonderland), "if you do not know where to go, it does not matter which way you take", the first step in any improvement process is to figure out what you and your team want to accomplish. Consequently, a first step for improving your team's or division's innovation capability is to reassess the innovation strategy of your organization. In this phase it is important to look back at earlier innovations and achievements as well as at the organization's overall strategy. While the explicit focus on innovation differs between organizations, most organizations have several ideas on how to provide customers with new or improved offers which are financially or in other ways successful for the organization.

What is the innovation strategy of your team and how is that aligned to corporate strategy? How does your strategy relate to the general areas of the first level of the MINT model: (innovation elicitation, project selection, ways of working and impact)?

2 BRING YOUR TEAM TOGETHER TO ESTABLISH BOTH SHORT AND LONG TERM INNOVATION GOALS AND ACHIEVEMENTS.

In order to be successful we argue that true commitment to innovation starts with early engagement of team members. By collectively setting up goals and learning outcomes, the forces of self-organization towards achievement will ease and improve innovation processes. After general goals have been discussed and a few important measures have been selected, these need to be made concrete and operational in order to provide any guidance on a daily basis for the team members. The MINT compass is a useful tool and way of thinking for this, which starts by asking the questions:

[1] Where are we now? Establish an estimate which characterizes the current situation in relation to a selected goal;

[2] Where are we going? Set the long-term direction by assigning a target value for the selected goal to be achieved within a defined long-term period, e.g. after two years;

[3] What is the next step? Agree on a short-term target value for the selected goal which can evaluated in, e.g. three months.

3   DEVELOP A MEASUREMENT MODEL WHICH CAPTURES PREREQUISITES FOR INNOVATION FOR YOUR TEAM

In his phase we suggest that you and the team discuss the external and internal contexts for your innovations. There might be factors which need to be communicated to the top management team, such as specific resources and activities. There might also be established, traditional measures such as patents and number of ideas suggested which might be a policy for the whole organization. However, there might also be aspects within the team, such as individual driving forces, which need to be discussed. What is really driving your team; recognition, bonuses, problem-solving, delighting customers, etc.? With the use of the four areas in the MINT framework (elicitation, selection, ways of working, and impact), together with the contextual model for the innovative team, you will be able, together with your team, to find some of the prerequisites for improving the innovation capabilities of your team and organization.

4   ASSESS THE INNOVATIVE TEAM

During this step the focus is on the team itself with the purpose of discussing and assessing how the team will work together. In this step it is important to focus on the concrete, every-day activities which are being performed in the innovation processes. An important question to discuss is, for example, the time horizon for the team. Should there be a temporary or a permanent team? This will be central for the setup of measurement activities and therefore important for the team to acknowledge in order to be successful. Another aspect for the team to consider is how to interact and work together. This involves questions like; How often do we meet? What type of facilities will we require?

Another aspect which needs consideration is the issue of documentation. While documentation of agreed innovation measurement indicators will be important it should be designed in a way which minimizes the need for extra administration. Experience tells us that too much extra administration will result in less commitment from team members and draws the focus from the innovation process.

Finally, the team climate is also a central aspect for innovative teams and lots of research has pinpointed important factors for teams to become successful. Factors such as trust, commitment, workload, focus, degree of conflict, etc. are often mentioned. A thorough discussion among team members and managers is also essential and should be prioritized. While it is mentioned as a step in the process, the team climate is something which needs to be discussed and reassessed continuously.

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5 USE MINT FRAMEWORK FOR INSPIRATION MEASUREMENT INDICATORS

Go through the four areas of the MINT framework in order to establish relevant measurement indicators for each area. In each area the MINT framework provides a set of factors, and for each factor a set of inspiration measurement indicators to choose or be inspired from (see tables 1-4 in the appendix for inspirational innovation measurement indicators).

1. INNOVATION ELICITATION

The identification and generation of ideas and innovation projects can be active or passive. Active identification means that specific activities and processes are planned and carried out in order to find new ideas and suggestions, e.g. brainstorming sessions, innovation workshops, etc. Passive identification means the mapping of ideas and suggestions from the past, spontaneous suggestions from coworkers or reviews of customer complaints. Elicitation can also be internal or external, where the former means that the generation of ideas is created within the team. External elicitation involves the rest of the organization as well as the involvement of customers and users. In this case, the use of what is often called extreme users might be beneficial. Feedback to the generators and/or identifiers of innovative ideas is another factor found to be of great importance in this phase. The speed and quality of feedback to the people who have provided the ideas
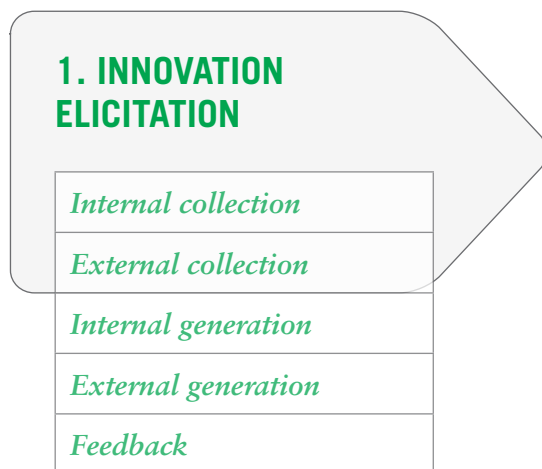

1. INNOVATION ELICITATION

Internal collection
External collection
Internal generation
External generation
Feedback

FIGURE 5 *Factors related to the innovation area of elicitation.*

are of importance, in order to cultivate an innovative culture, something most organizations interested in innovation want to create. It is therefore important to consider the feedback factor in relation to chosen measurement indicators of the other factors in the innovation elicitation phase. In figure 5 the five factors you and your team ought to consider in order to set up measurement indicators for how innovation ideas are identified and handled, are presented.

2. PROJECT SELECTION

The second part of the MINT framework involves factors related to selection of innovation projects and efforts. The way innovative ideas and suggestions are prioritized should be aligned to the/an organization's overall strategy, and to its innovation strategy in particular. With this in mind there are several factors which need consideration and from which measurement indicators can be decided (see figure 6 for project selection factors).
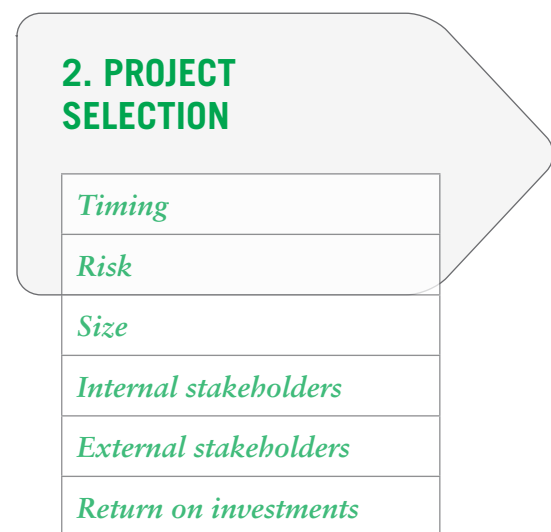

2. PROJECT SELECTION

Timing
Risk
Size
Internal stakeholders
External stakeholders
Return on investments

FIGURE 6 *Factors related to the innovation area of project selection.*

The timing of innovation projects is central in the selection process. While a focused market analysis of any innovation potential should be carried out in order to select which projects to initiate, other aspects also influence the prioritization. The estimated time to market as well as internal lead time, i.e. time until the potential innovation can be handed over to other development areas of the organization, is also central in order to realize the innovation projects selected. Risk is another factor which could be part of the measure-

ment program. Any innovation project is characterized by both uncertainty and complexity, making the selection challenging. By assessing, subjectively, the risk of potential innovations, e.g. feasibility, technology challenges and alternatives, customer acceptance, this can help in the selection of projects but also, perhaps more importantly, may provide insights and learning for the team.

By measuring the success/failure rate of projects based on previous estimated risks, teams can, over time, evaluate and develop their risk-taking abilities and hence improve their innovation capabilities. From a project portfolio perspective, the size and scope of different projects is also beneficial for teams or division to measure. The project portfolio considerations relate to available resources, and to efforts which projects need to make in order to be successful. The fourth and fifth factors rely on stakeholders, internal or external, who may more or less be influential on the potential of innovations.

The first step is to map out stakeholders who are directly and indirectly affected by innovation projects and their results. Thereafter, the assessment of how different stakeholders are affected might be crucial for the success of the projects selected and for the learning over time. Potential aspects to assess are, for example, the distribution of projects over stakeholders, the number and distribution of projects which challenge existing business models or technology paradigms, the radicality of future scenarios related to projects, the number of projects with new markets, new users, new customers.

Finally, a classical measurement indicator related to projects, i.e. the return on investment from projects, should also be considered as a factor containing different candidate indicators in the establishment of an innovation capability measurement program.

3. WAYS OF WORKING

The processes, procedures and activities carried out by the team, together or individually, all influence the final result of any innovation effort. Consequently, it might be crucial for the development of innovation capabilities, for project success, and for the creative climate to have good insights into, and understanding of, how their processes work and why. By assessing ways of working such insights can be gained, and targeted im-

provement efforts can be initiated. In figure 7 six factors are listed in order to assess the ways of working.

The ways of working is both beneficial and interesting to assess over time, since these processes are the heart of a team's innovation efforts. The amount of time needed for creative and innovative work vs. administration is one such measure, as are subjective assessments of the team's efficiency and effectiveness. All these measurement indicators impact the self-image of the team and the processes of making sense of how things really work.

Another area of importance for any long-term innovation effort is the working climate. The actual and perceived time people have for creative discussions, free time for thinking, working just out of interest, assessment of negative factors such as personal conflicts, being overloaded, stress, etc. are all areas which can be measured in order to improve innovation capabilities. Incentives are a third area which affects ways of working. For example questions of financial incentives, recognition, , individual or team-based rewards are alternatives to consider when a reward system is being created. The incentive program set for any innovative team definitely impacts team members' ways of working . As a result, measurement of incentives which are evaluated over time against climate and/or outcomes could be essential for long-term success.

3. WAYS OF WORKING

- *Process*
- *Climate*
- *Incentives*
- *Competence*
- *Organization*
- *Process improvements*

FIGURE 7 *Factors related to the innovation area of ways of working.*

The fourth factor deals with team competences and covers the distribution of team member age, gender, experience, and education, the number of job rotations, the number and difference of projects each team member has managed or participated in, etc. These measurements provide guidance in several areas for the team to consider, e.g. the recrutment of new members, in providing perspectives on innovation inititives etc.

Organization is a fifth area related to ways of working as it impacts the team's possibilities in budgetary, resource and time-related ways. Finally, the continous improvement of the innovation processes is something we have found to be of special importance. By measuring a team's ability to improve the process, i.e. the number of proposals for process improvements from team members, impact of stakeholder feedback, etc., the innovative team could greatly improve its performance over time.

4. IMPACT

The fourth area of innovation measurement methods in the MINT framework, covering five different factors, relates to impact of innovation efforts by the team or the division. In this fourth area more traditional innovation measurement results such as patents and return on investments can be found. However, there are also several measurement suggestions which are quite new in the context of innovation.

By measuring features of a product or service which become successful when it reaches the market the team can reflect on specific projects where these features were innovated. Furthermore, when it comes to innovation it might not only be the product or service itself which sells, but more importantly (at least in the early phases) expectations and positive "rumors" of its qualities or features (e.g. the iPad by Apple). Hence, for some products it might be very beneficial to focus on providing stakeholders with inspiring information. Consequently, the right measurment indicators are also needed; these would be the assessment of the team members' networks, the number of internal and external presentations by the team, efforts in internal marketing, the variety and number of collaboration efforts with internal and external stakeholders.

The third factor, trust, represents a highly verifiable factor when it comes to the success of people and teams. However it is very difficult to assess quantitatively as
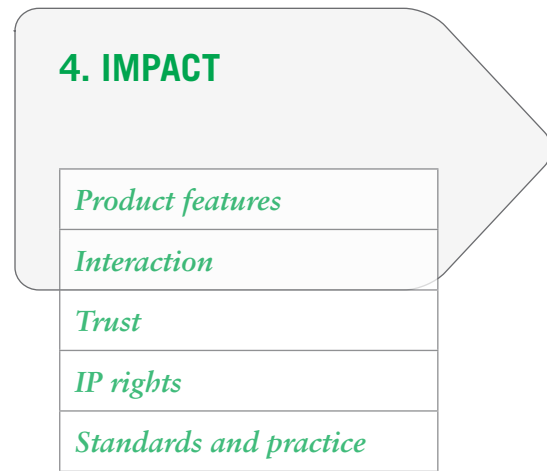
4. IMPACT

Product features

Interaction

Trust

IP rights

Standards and practice

FIGURE 8 *Factors related to the innovation area of impact.*

well as objectively. Nevertheless, one should measure what provides value and not what can be easily done. Consequently, the subjective assessment of how stakeholders such as top management, lead-users, marketing departments, etc. perceive the work being done by the team is important for both the team's survival and its mission.

The number of invitations to different stakeholders can also provide insights for the team into the degree of trust felt for team members. The fourth factor is traditionally considered when it comes to assessing levels of innovation i.e. It covers measurement indicators related to patent applications, patent portfolios, etc. Standards and practice represent the final impact factor. In industries like healthcare and medicine, the actual success of a product or service may rely on the change of standards and practice since these have great impact on what type of products and services that are accepted and used. Thus, for any organization to be successful, considerable work has to be done in influencing practitioners and professions over several years. Such work also needs to be measured so that it remains a focus.

Measurement indicators could be the number of occasions the team members have impacted or introduced any standard or practice, the effort spent on driving the change in standards and practice, and subjective assessment of which standards the team can impact and which they are less able to.

6

REFINE YOUR SHORT AND LONG TERM INNOVATION GOALS

After having worked through measurement model, team prerequisites, and the innovation areas in the MINT framework there is a need to iterate with the earlier defined innovation goals. Think in action in this phase. Innovation is not only the achievements but the ac-

tions to take to get there as precedent steps probably have urged you to think about. Which actions does your team need to make to increase innovation capability? The MINT compass is of course useful to apply even in this step. Also make sure that the measurement system gets complete, with measurements, time frames for measuring and follow up and involved actors. Actors point to who should collect data and who does the evaluation and communication.

7

USE YOUR TAILORED MEASUREMENT PROGRAM FOR ENCOURAGEMENT OF INNOVATION, FOR FEEDBACK, AND FOR COMMUNICATION

It is important to point out that this framework first and foremost should be used for increasing innovation capabilities among team members. While measurement can, and should, be used for several purposes, i.e. monitoring, backtracking, providing/increasing understanding and motivation, and as development support, the latter three are most important in this case. Hence, once the MINT framework has been implemented as

a measurement program for increasing innovation capabilities several positive effects can be seen, especially on the team and its output. The framework provides a focus on factors and indicators which encourages innovation. With suitable measurement indicators implemented the team will get the right feedback, both from its internal work and from its surrounding stakeholders; feedback which drives the innovation processes further.

Hence, when reaching this step the question to ask oneself is: Do the measurement indicators used by my team really encourage innovation, provide the best feedback possible, and enable great daily communication which helps us excel in our innovation goals?

TOOLS

Depending on the maturity of the organization different tools and methods might be relevant for assessing strategies, for mapping relevant processes, for facilitating innovation workshops and for administration of the measurement indicators decided on. However, as the MINT framework is best applied to a team level, different kinds of visual methods, where measurement indicators can be illustrated and where change over time is presented, would be suitable. Nonetheless, different tools should be used with carefulness. This is because focus often moves from the goals to their measurement when tools are introduced. Moreover, when it comes to complex issues such as innovation, making sense and understanding of the purpose of measuring in order to increase innovation capabilities are prerequisites.

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APPENDIX

INNOVATION INDICATORS FOR INSPIRATION IN ACCORDANCE WITH THE FOUR INNOVATION AREAS

TABLE 1. MEASUREMENT INSPIRATION RELATED TO THE AREA OF INNOVATION ELICITATION

INNOVATION ELICITATION	
Factors	**Measurement inspiration**
Internal collection	Number of incoming proposals from different sources
	Number of analyzed patents in patent portfolio
	Number of, and time between, activities of collaboration with patent team
External collection	Number of, and time between, collection activities focused on specific external stakeholders (different types of users, customers, competitors, owners, public authorities, etc.)
	Number of visited events (conferences, convents, courses, etc.)
	Number of investigations of other companies (potential threats, technology providers, takeovers, etc.)
	Number of patents or prototypes further developed based on existing patent portfolio
Internal generation	Number of, and time between, activities of presenting the work of the innovative team
	Longitudinal change of proposal (e.g. to see peaks after presentation activities)
	Number of, and time between, activities of systematic idea generation (e.g. different types of brainstorming and elicitation workshops)
External generation	Number of observation studies of users
	Number of projects based on ideas from external stakeholders
	Number of workshops with customers on future needs
Feedback	Number of submitted proposals from people with rejected proposals (it is important that people continue to give proposals even if not all ideas become projects)
	Elapsed time from proposal to feedback
	Effort spent in giving feedback

TABLE 2. MEASUREMENT INSPIRATION RELATED TO THE AREA OF PROJECT SELECTION

PROJECT SELECTION	
Factors	**Measurement inspiration**
Timing	Estimated lead time to market launch of project results
	Ratio of short-term and long-term projects
	Estimated lead time to handover of projects results to internal stakeholders
Risk	Subjective assessment of project risk (feasibility, technical challenge, etc.)
	Number of parallel tracks or options investigated (in case of technology uncertainties)
	Number of terminated/unsuccessful projects (a certain degree of risk-taking is good)
Size	Estimated project effort
	Distribution of project size (effort) in portfolio
Internal stakeholders	Distribution of projects over different types of internal stakeholders
	Number of projects which challenge current business models or paradigms
	Number of projects which focus on incremental enhancement of existing product features
External stakeholders	Number of projects based on radical future scenarios
	Number of projects with end user relevance
	Number of projects with future customer or new market relevance
Return on Investment	Estimated return on investment
	Potential loss (alternative cost) of not selecting a project (worstcase scenario).
	Number of, and time between, decision input from steering committee on which projects to prioritize

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TABLE 3. MEASUREMENT INSPIRATION RELATED TO THE AREA OF WAYS OF WORKING

WAYS OF WORKING	
Factors	**Measurement inspiration**
Process	Subjective assessment of the efficiency of the team's ways of working
	Share of total effort spent on creative work compared to, e.g. administration
	Subjective assessment of the effectiveness of innovation assessment methodology
	Number of projects which shift from innovation to normal development
	Estimated remaining investment needed to implement innovation in real products
	Share of prototype construction (e.g. lines of code) which can be reused directly in normal product development
Climate	Number of consecutive nonbooked time slots in each team member's calendar
	Time allocation devoted to each team member's own proposals
	Time between deadlines for each project member
	Subjective assessment of the team's climate with respect to open, constructive debates
	Subjective assessment of negative climate factors (personal conflicts, fear of failing, being overloaded, etc.)
Incentives	Monetary rewards for achieved personal and group goals achieved
	Monetary rewards for patent proposals
	Number of instances of recognition of personal and group achievements
Competence	Distribution of team member's background, experience, age, gender, etc.
	Number of competence area that are mastered within the team
	Subjective assessment of how well strategic competence areas are covered
	Number of job rotations per year
	Number of projects each team member has managed or participated in
Organization	Project resources (effort, budget, etc.)
	Number of projects per year, number of people involved per project
	Lead time per project
	Share of budget on outsourced projects
Process improvement	Number of process improvement proposals from team members
	Number or process improvement proposals based on stakeholder feedback on the team's results
	Number of implemented process improvement proposals
	Subjective assessment of number of process improvement proposals which have impacted the team's ways of working
	Subjective assessment of the benefit of each process change
	Number of process changes which are considered significant improvements

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TABLE 4. MEASUREMENT INSPIRATION RELATED TO THE IMPACT AREA

IMPACT	
Factors	**Measurement inspiration**
Product features	Number of released product features impacted by the team's work
	Number of projects plans impacted by the team's work
	Number of change requests which originate from the team's work
	Number of end users of released product features that originate from the team's work
	Number of results from the team accepted by product planning (or other stakeholders)
	Subjective assessment of the extent to which the team's results have positively (compared to neutral or negative) impacted released products
Interaction	Number of people in the team's contact network
	Number of stakeholders covered by contact network
	Share of project effort spent on internal marketing
	Number of visitors at events where the team's work is presented (e.g. demo shows)
	Number of company employees outside the team who know about the team's work
	Number of collaboration activities with internal and external stakeholders
	Effort spent on handover and integration of results into products
	Number of internal promotion meetings with relevant stakeholders
Trust	Number of invitations of team members to presentations, meetings, courses, etc.
	Subjective assessment of the quality of the team's results by recipient stakeholders
	Number of times the team's project reports have been accesses in coporate document management system
	Results of questionnaires on quality of results answered by participants at presentation events
	Subjective assessment by internal stakeholders on the team's credibility in various strategic technology areas
Intellectual property rights	Number of patent proposals, number of patents applications, number of filed patents (per year, per person), etc.
	Effort spent on patent proposals
	The team's share of the company patent incentive program
	The team's share of company patents (proposed and filed)
Standards and practice	Number of standardization organizations and practice-shaping networks the team has participated in (actively contributing or passively monitoring)
	Number of occasions where the team's work has impacted standards and practice
	Share of standardization bodies which are impacted vs standardization bodies it would be relevant to impact
	Subjective assessment of ability to impact standardization and practice vs competitors
	Effort spent on driving standards and shaping practice

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