Idea Management in Switzerland and Germany: Past, Present and Future

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Betriebliches Vorschlagswesen, Ideenmanagement, Innovationsmanagement, Kaizen, Kontinuierlicher Verbesserungsprozess, Industriebetriebe, Produktionssektor

Employee suggestion scheme, Idea management, Innovation management, Kaizen, Continuous Improvement Process, Industry, Manufacturing sector

Die Ursprünge des Vorschlagswesens können bis auf das Jahr 1750 zurückgeführt werden. Insofern ist das heutige Ideenmanagement eines der nachhaltigsten Managementkonzepte. Es wurde im Laufe der Zeit ständig den veränderten Bedingungen in den wirtschaftlichen, sozialen, technischen und ökologischen Umweltsegmenten angepasst. Die zu beantwortende Kernfrage blieb immer konstant: „Wie können Beschäftigte motiviert und qualifiziert werden, durch ihre konstruktiven und kreativen Ideen zur kontinuierlichen Verbesserung der betrieblichen Prozesse und Produkte beizutragen?“ Auf der Basis der langjährigen Forschungserfahrung des Verfassers und einer Reihe von klar erkennbaren Zukunftstrends zeigt dieser Beitrag auf, welche Faktoren den Erfolg des Ideenmanagements in der Vergangenheit und Gegenwart begünstigen konnten und welche neuen Chancen sich in der Zukunft eröffnen.

Since its inception in the 18th century, idea management has turned out to be one of the most persistent management concepts ever. While it has constantly adapted to changing economic, social, technological and ecological environments and will be obliged to continue to do so in the future, it has a stable core that consists in the effort to provide answers to the following question: “How to motivate and empower as many employees as possible to contribute constructive and creative ideas so as to continuously improve operational processes and results?” On the basis of the author’s personal history in research and a number of clearly discernible future trends, the present paper outlines some of the crucial features that successful idea management has had and will have in the past, the present and the future.

1. A journey in research – a personal retrospective and overview

Idea management is a managerial device designed to enable and motivate employees to make suggestions as to how to improve corporate processes and products. The suggestions submitted are evaluated by expert reviewers and, if judged appropriate, put into practice. A specific suggestion provides a description of the current situation and points out exactly what is considered to be in need of improvement. The actual idea put forward must produce a benefit. This benefit may consist for instance in cost reduction, increased safety, lower emissions, hazard prevention or health improvement, better quality standards, im-

age enhancement, etc. The fundamental mechanisms of idea management go way back in history (in the manufacturing industry at least to the year 1872). Their technical realization by way of concrete instruments (e.g. organisation, incentive systems), however, has continuously been adapted to changing contextual conditions.

As a management researcher I have been interested in employee suggestion schemes and their development into "idea management" in the current sense since the mid-1970s (cf. *Thom* 1990a; 1990b). Together with assistants and students, I have carried out a long series of empirical studies in Germany and Switzerland. It has been a protracted research process that, essentially, invariably dealt with the following question: "How to motivate and empower as many employees as possible to contribute constructive and creative ideas so as to continuously improve operational processes and results?"

Table 1 lists a selection of studies dealing with this question which were co-authored or supervised by me between 1977 and 2008. The table contains the six most relevant empirical studies (cf. appendix for more details), three literature studies (supplemented by expert interviews) aimed at identifying trends, and an intensive case study at a major Swiss enterprise (postal and telecom services provider). An overview of the most important conclusions and a synoptic account of the development of the employee suggestion scheme/ idea management concept are available in *Thom/Piening* 2009.

	Title of publication	Author(s)	Methodology
1.	Das Betriebliche Vorschlagswesen als Innovationsinstrument (Employee Suggestion Schemes as an Innovation Tool)	*Losse/Thom* (1977)	cf. appendix
2.	Verbesserung und Ausbau des BVW (Enhancement and Expansion of Employee Suggestion Schemes)	*Post/Thom* (1980)	cf. appendix
3.	Kooperations- und Konfliktfelder von Unternehmungsleitung und Betriebsrat beim BVW (Areas of Collaboration and Conflict between Executive Boards and Works Councils with Regard to Employee Suggestion Schemes)	*Büsch/Thom* (1982)	cf. appendix
4.	Das Vorschlagswesen als Instrument innovationsorientierter Unternehmensführung (Suggestion Schemes as a Tool for Innovation-Oriented Management)	*Bumann* (1989; 1991)	Case study at Swiss telecom and postal services company
5.	Innovationsmanagement in Schweizer Unternehmen (Innovation Management in Swiss Companies)	*Vonlanthen* (1995)	cf. appendix
6.	Grenzen und Chancen des Vorgesetztenmodells im BVW (Opportunities and Limitations of the Decision-Making-Chain Model in Employee Suggestion Schemes)	*Etienne* (1997)	cf. appendix
7.	Vom Vorschlagswesen zum Ideenmanagement (From Suggestion Schemes to Idea Management)	*Zimmermann* (1999)	Review of existing literature, interviews
8.	Betriebliches Vorschlagswesen im Wandel (New Directions in Employee Suggestion Schemes)	*Habegger* (2002)	Review of existing literature, interviews
9.	Erfolgreiches Ideenmanagement (Effective Idea Management)	*Hofer* (2005)	Review of existing literature, interviews
10.	Entwicklungstendenzen im Ideenmanagement (Development Trends in Idea Management)	*Piening* (2008)	cf. appendix

Table 1: Selected studies from 1977 to 2008 co-authored or supervised by the author

All of these research activities employed a pluralist methodology as this proved to be most effective. Elaborate pictures of the current situation at hand would be established by means of broad surveys which included interviews with idea managers, decision makers, idea submitters, non-submitters, works councils and expert observers. Specific data would then be gathered through in-house case studies for which numerous employees were interviewed. Questionnaires and corporate documentation (agreements, regulations, statistics, advertising material, etc.) would be submitted to analyses using quantitative as well as qualitative methods. After several decades of research (cf. in particular the six important studies in the appendix), a reference framework began to take shape that includes external, in-house and HR factors, general and specific management tools (action parameters) as well as success factors (criteria for measuring the success of idea management). This has made it possible to formulate effective criteria for the design of first-rate idea management (cf. the checklist in the appendix of *Thom/Piening* 2009, 195–199). In 2005 and 2011, these criteria were applied to identify the Swiss company with the best idea management.

The current state of the art in idea management research also allows for the formulation of strong hypotheses that can be tested against large-scale empirical studies. For example, detailed workforce interviews in large companies with extensive experience in idea management might reveal obstacles that hamper idea submissions and point to effective ways of overcoming them (cf. the role of "promotors" emphasized by *Hauschildt/Kirchmann* 2001). Such approaches could be combined with intercultural comparisons (e.g. differences between Spain, the United Kingdom and Germany), although adequate attention would have to be paid here to differences in definitions and concepts. Adequate sample sizes provided, research into success factors could also be undertaken by applying advanced statistical methods (regressions, structural equation models) to establish clearer causal links between choice of tools and obtained results. Other empirical studies could address the question of how success factors are affected when external agents such as clients and suppliers (cf. *Frey et al.* 2011) get involved in idea management, which has traditionally been (and indeed continues to be) regarded as a tool solely for suggestions from employees (on this issue cf. also *Brem/Voigt* 2007).

2. Idea management in Switzerland: the present

According to the European Innovation Scoreboard (*European Commission* 2013), Switzerland is the most innovative of all European countries. One of the 25 indicators used by the scoreboard pertains to "introducing marketing and organizational innovations". These of course are types of innovation which may well be triggered by idea management.

In the following paragraphs, I turn to the current situation in Switzerland as it presents itself in the most comprehensive recent study conducted under my aegis. The results of this study are presented in more detail in *Thom/Piening* 2009, 171ff.; I will restrict myself to a discussion of some of the most significant results.

The study questioned 57 firms in Switzerland that have an idea management scheme in place. 70% of them belong to the manufacturing, 30% to the services sector. This shows that idea management is much more widespread in the manufacturing than in the services sector, which latter accounts for 70% of the total number of jobs in Switzerland.

Six of the responding firms (the "top scorers") considered the quality of their own idea management to be excellent. Their replies were used as a benchmark to compare the other

51 firms with a view to determining obvious differences in approach. The answers of all 57 companies stem from their idea managers.

Asked about the three most important design features of an idea management scheme, the companies replied as follows (items ranked according to order of importance):

1. Quick and transparent evaluation of submitted ideas
   An organisational challenge heads the list: what is required is an internal process that minimises the time between the idea's submission and its evaluation on the basis of lucid criteria. Submitters want to know why their ideas are approved or rejected and whether and how they might be rewarded.
2. Effective advertising to promote submission of ideas
   All employees eligible for participation need to be targeted by advertising media, and as many as possible must be convinced to contribute their ideas. To achieve this, innovation managers must understand the mentality of their workforce, choose their advertising channels accordingly and place advertisements in such a way that they find their mark and trigger the desired response of "Yes, I have an idea and I want to come forward with it!" In this context, internal communication processes are key.
3. Decision-making-chain model strongly recommended
   With the classic employee suggestion scheme, direct superiors were bypassed in that submitters were asked to turn to a specific suggestion scheme administrator. However, idea managers suggest that effectiveness is greater if submitters contact their immediate superiors first. This does not merely amount to an organisational change; rather, it requires a change in corporate culture. Superiors must be receptive to ideas suggested by their subordinates. These, in turn, are encouraged to approach their superior, who has clearly defined competences to decide whether or not a submission should be accepted and implemented. Only ideas that exceed the direct superior's area of expertise and/or affect other departments are passed on to the idea manager. Such a restriction of the idea manager's responsibility will help avoid bottlenecks. Handling suggestions for improvement from employees must become part of any superior's habitual tasks. This will also likely increase participation and acceptance rates. Implementation will become smoother, since there is no initially bypassed superior whom one must convince after the fact of the new suggestion's benefits; thus subtle obstructions in implementation can be avoided.

The limitations of the decision-making-chain model are discussed by *Etienne* (1997). Decisive are the attitudes and values with which individual superiors look upon the efforts of their subordinates (cf. also the remarks on *human resources factors* below).

A number of further important insights from the study under consideration concern the frame of reference (cf. *diagram 1*) which was first drafted in *Thom/Losse* (1977) and which has been continuously enlarged and modified in the course of more than thirty years of research (cf. also the studies in the appendix). It should be emphasized that this reference frame as it stands has general validity only for Germany and Switzerland and the specific external factors in place there around the year 2010. The most recent trends (cf. section 3) will likely lead to modifications and new orders of relevance.

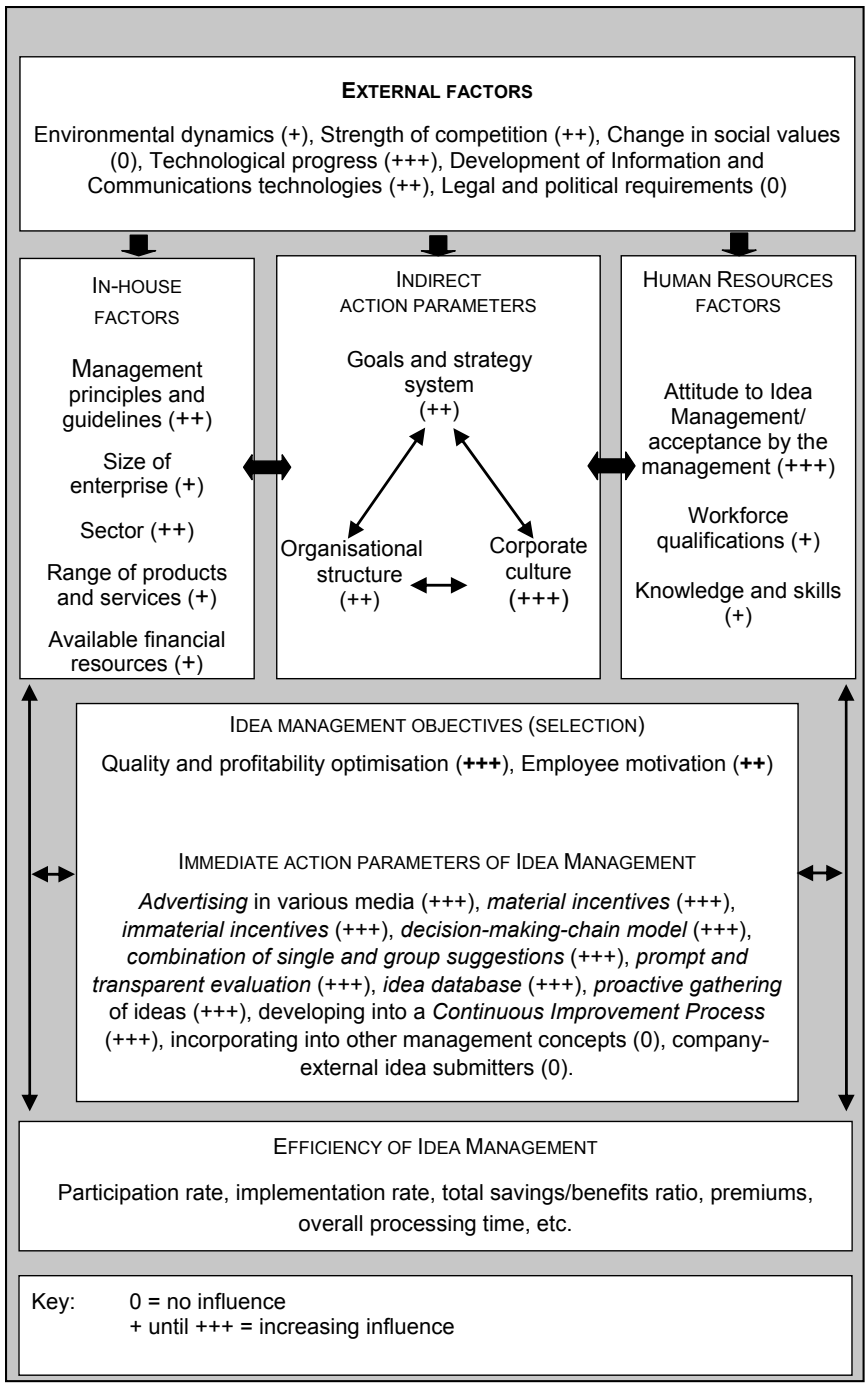

Diagram 1: Reference frame for idea management (Piening 2008, 117; Thom/Piening 2009, 173)

1. Asked about the most influential *external factors*, the managers interviewed regarded technological progress and heavy competition as the strongest drivers for successful idea management. Essentially, this means that idea management schemes are more likely to develop successfully in highly competitive branches. The automotive supplies sector provides a good example here, whereas public administration and other monopoly sectors tend to lag behind. Technological progress is a matter of innovations. Every large innovative step creates opportunities for a follow-up process of continuous improvement. Just think of contemporary manufacturing, transportation, information and communication technologies: in these fields, the potential for employee suggestions is huge.
2. Regarding significant *in-house factors*, the idea managers considered suitable management principles and guidelines as especially important. Most conducive to an effective idea management is a cooperative and appreciative leadership style where employees are viewed as partners rather than subordinates. The decision-making-chain model mentioned above heeds leadership principles of this kind. The principles should be written down and be taught and applied in day-to-day operations.
3. Regarding *human resources factors*, attitudes and unreserved acceptance of idea management on the part of decision makers (the senior executives) appear to be essential. Only if managers at all levels, right up to the top, support idea management and endorse it as an integral part of contemporary management does idea management have a chance to develop as it should. Even a casual condescending remark like "We're doing it because everybody else in the sector is doing it; it can't do any harm after all..." can sabotage idea management in practice. Mere tolerance is not enough – what counts is active support. The "top scorers" in the study already have this kind of favourable policy firmly in place.
4. Objectives and strategies, organisational structure and corporate culture are key *general management tools* that indirectly affect the development of idea management. All of them are important, but the one with the largest impact is clearly corporate culture, as this involves various value dimensions. HR-related values have already been mentioned (cf. the remarks just made about leadership principles). Another important stimulus can come from innovation orientation, meaning that innovative thinking and attitudes are highly valued and rewarded. Cost awareness is certainly also beneficial for a functional idea management: employees must be encouraged to behave cost-consciously and to save resources. Finally, the principle of client orientation can also provide a very positive impetus for idea management: everyone in the company should be made aware that their actions must always serve to satisfy both external and in-house clients.
5. Among the *top goals* of idea management, the aim of motivating employees to contribute constructively to the company's procedures and operations surely ranks high. However, the idea managers of the 57 responding Swiss companies accorded quality and profitability enhancement an even greater significance. Today, quality targets concern not just product quality, but also operating processes and working environments.
6. Of the *immediate tools* for increasing idea management efficiency, the following nine action parameters were regarded as the most important. The first three have already been mentioned:

1. Quick and transparent evaluation of suggestions
2. Advertising in various media to encourage submissions (strongly promoted by the "top scorers")
3. Decision-making-chain model

Further parameters with a significant impact are:

4. Material incentives
   Submitters of suggestions that have been accepted and implemented should receive their share (e.g. 15% or more) in the calculable annual savings resulting from the suggestion (after subtraction of implementation costs). A supplementary premium based on the actual savings (beyond the first year) is also an option. Higher incentive premiums (up to amounts of 50%) do not necessarily improve participation proportionally; transparency of incentive regulations and quick implementation of accepted ideas are just as important (cf. *Thom/Piening* 2009, 50ff.).
5. Immaterial incentives
   Acknowledgement of idea submitters' contribution by superiors, idea managers, idea management committee members and – in the case of outstanding ideas – by the senior management is of particular importance. Largely intrinsically motivated submitters will feel confirmed by the simple fact that their idea is realised as fast as possible. Managers of especially idea-productive units as well as scrupulously, fair and fast-working evaluators of complex ideas should also receive appropriate recognition.
6. Combination of individual and group suggestions
   Traditionally, suggestions for improvement came mainly from individual submitters, although informal groups have also existed for a long time. Such groups consist of a minimum of two people who develop and submit the suggestion together as a team. In Germany, proper group employee suggestion schemes first came into being towards the end of the 1960s. They were soon followed by training sessions for group work techniques. In the 1980s, the quality circle concept was introduced into Europe from Japan. Along with common informal groups of idea submitters, quality circles can be a useful tool to tap into the creative potential of a workforce (cf. *Thom/Piening* 2009, 112 ff.).
7. Implementing idea database technology
   Sophisticated digital tools for idea management (idea databases and specific idea management software) are available today. Such tools help reduce the overall processing time from submission to implementation. They ensure that no submissions are lost and make it possible to establish in fairness who first submitted an idea. The idea manager's processing capacity is significantly enhanced by such technologies. In the decision-making-chain model, the innovation manager can serve as a second submission channel and is, in any case, the right contact for ideas that go beyond the field of expertise of immediate superiors. Either way the idea manager is in charge of overseeing the entire process.
8. Proactive gathering of ideas from the workforce
   Traditionally, managers would wait for an employee to approach them with a suggestion for improvement. In the meantime, more and more firms are trying to actively collect good ideas from their employees. This approach is significantly more

widespread among the companies that ranked as "top scorers" in the study. It reduces typical obstacles that may otherwise hamper submission of improvement suggestions (cf. *Thom/Piening* 2009, 33ff.); moreover, it sends out a clear signal that contributing ideas is a part of everyday corporate culture.

9. Development into a Continuous Improvement Process
   A fundamental assumption underlying the Continuous Improvement Process is that large steps of innovation are always followed by small steps of continuous improvement. In a Continuous Improvement Process, suggestions are usually developed by groups and do not come from individual submitters. These groups are led by employees who are specially trained in the relevant skills. The ideas produced usually pertain to their specific field of competence and closely related areas. A particularly efficient Continuous Improvement Process in a Swiss company (one of the "top scorers") is described in *Thom/Piening* (2009, 183ff.) in a brief case study and presented in a didactical context in *Thom* (2013, p. 225ff.) and *UVK* (2014).

The idea managers interviewed in the survey showed more reservations when it came to the following further possible measures: (1) they saw no decisive advantage in incorporating idea management into other management schemes (e.g. quality, innovation and knowledge management); and (2) in their opinion, company-external idea submitters (e.g. clients and suppliers) do not really suit idea management, which they think should be aimed primarily at employees.

7. With regard to *efficiency metrics*, there was a firm consensus; as any expert on the subject would expect, the following figured prominently among them: participation and implementation rate, total savings through ideas, cost-benefit ratio of idea management, premiums, overall processing time of the ideas. The challenge of applying such criteria lies in finding commensurable definitions on both national and international levels (cf. the definitions and statistics in *Thom/Piening* 2009, 22-31).

3. Trends in the manufacturing sector and their relevance for idea management: the future

Starting from a number of important economic trends in advanced industrial nations (such as Switzerland and Germany), a series of theses and prospects are proposed below regarding the impact these trends are likely to have on idea management. The presentation of the trends is inspired, among other sources, by *Bundesministerium für Wirtschaft und Technologie* (2010). This study by the German administration develops plausible scenarios for the coming 5 to 15 years (without resort to statistics). The author specifically selects for discussion certain megatrends which partly are also identified in other studies (cf. *Bundesverband Deutscher Industrie* 2011). The concluding *diagram 2* arranges them according to the frame of reference presented in the last section (cf. *diagram 1*).

3.1 Countries with research-intensive industries will keep their strong competitive position

The manufacturing sector contributes roughly 20% to Germany's gross value added. At 22%, it boasts a similar share in Switzerland. Historically, idea management has always been much further developed in the manufacturing than the services sector (cf. section 2 above). In the future, the manufacturing sector will certainly keep its potential for devel-

opment. Consider the automotive, electrical, chemical and pharmaceutical industries, mechanical engineering and medicinal technology; all these sectors are governed by extremely heavy competition that spares no one.

3.2 Environmental and climate protection are gaining in importance

This especially concerns countries with high ecological standards and corresponding regulations. It is a further trend that can provide positive impetus for idea management; what is called for is the addition of an explicitly ecological dimension to the quality objectives. At least some of the potential idea submitters will take such new requirements readily on board and, if encouraged by corresponding targets and incentives, will eagerly come forward with ideas for environmental and climate protection.

3.3 Efficient use of energy and material resources is called for

Herein lie excellent opportunities for financially calculable improvement suggestions. The easier it is to calculate the concrete value of a suggestion, the more likely becomes an adequate financial reward for the submitter. Furthermore, the economic value of idea management can be made directly visible to higher management levels, which should stimulate support from their part.

3.4 Technologies sensitive to demographic developments have enormous potential for growth

Population ageing is accompanied by a growing demand for products in the medical and health sector. Here, idea management might be well advised to specifically encourage older employees to make suggestions for improvement, given that they have a greater affinity both with the products in this sector and with the clienteles for whom they are made. It is currently an empirical fact that the longer someone has been employed in a firm, the less likely they are to come up with ideas. Any sophisticated HR management that takes demographic change into account will feel compelled to take action here. In addition, it will provide older employees with further training, involve them in projects and confront them with new challenges (e.g. through job rotation); it will put them in mixed-age teams and continuously motivate them to contribute ideas right up to retirement.

3.5 Mass production becomes individual

That customers increasingly become not just consumers but also producers is a trend that is already clearly visible today, for instance in the automotive industry. One possible consequence for idea management could be that in the future, other agents than just in-house employees will have to be involved in the idea generation process. As suggested in *Brem/Voigt* (2007, 309ff.) and *Thom/Piening* (2009, 164–167), creativity from outside could be imported into firms, which requires the development of specific tools (cf. *Piller/Walcher* 2006). The present reluctance of many idea managers to involve external idea producers (cf. end of section 2 above) should be re-examined; at any rate, bridges need to be built. Having said this, also in a world of fully developed customer-oriented mass production, a wealth of knowledge and know-how will still reside within the workforce. Promotion of employee participation will have to go on with unrelenting force.

3.6 More complex structures will arise across company, market and national boundaries

Flexible and virtual organisations such as networks and temporary clusters will become widespread in the future. These are not based on classic hierarchies within a single legal structure. Idea management will accordingly have to ensure its compatibility with other innovation tools pertaining to project management, HR development or the securing of intellectual property by means of patents and trademarks (cf. the complete overview in *Thom/Piening* 2009, 127). Furthermore, opportunities for wholly new organisational structures will arise: How should networks be organised? How do we secure quality standards at the interfaces between co-operation partners? These are examples of topics that would be perfectly suitable for idea campaigns.

3.7 Cooperation between the manufacturing industry and knowledge-based service providers will create competitive advantages

The service providers in question include lawyers, consultants, engineering companies, laboratories, research and development institutions, market analysts, banks and insurance companies. As mentioned before, there is still huge potential for developing idea management in the services sector. It should be raised to the same level as in the manufacturing sector. Service companies that feature award-winning idea management schemes already today are proof that this is a perfectly achievable goal.

3.8 The share of imported components in export goods from the German-speaking countries is on the rise

As coily implied by labels such as "Designed in Switzerland", a significant added-value contribution to many products stems from foreign companies. Idea management is an outstanding tool of the industries in German-speaking countries and can be developed at their international partners. An analogy here are the ongoing efforts to promote dual vocational training around the world. When idea management becomes an export good, it is sure to receive new stimuli. In the process, theorists and practitioners of idea management will have to learn which divergent culture-specific factors need to be taken into consideration. In international HR management, the buzz phrase that "culture matters!" really does apply (cf. *Hofstede et al.* 2002, ch. 3). The need for cultural tailoring will require new analyses of the principles of idea management and create greater interest in the issue among decision makers.

3.9 Greater demands on productivity

Due to demographic change, the working population is shrinking, which requires the remaining workforce to be more productive. Demographic trends cannot be ignored, and population statistics are reliable. Diagrams depicting the age-structure of the population of Switzerland, for example, have changed their shape from that of a pine tree (1900) to a poplar (1950) and now to a beech (2009). The beech is slimmer at its base than the triangular pine tree, which means that fewer young people are available for employment. On the other hand, the proportion of the 50+ workforce is growing steadily. Even substantial immigration from abroad cannot change this fundamental development, and in any case, the tolerance threshold for immigration lies at roughly a quarter of the population, as re-

cent ballots in Switzerland have shown. Remaining workforces will thus increasingly be subjected to greater pressure regarding their productivity; productivity, however, can be increased through innovations of all kinds. Besides product and process innovation, there is also social innovation: consider new forms of training, working-time schemes, remuneration systems, etc. The call for innovation at all levels will certainly create a favourable environment for idea management. Also this general trend is thus likely to add significance to idea management.

3.10 Industry 4.0

Lately, the term "Industry 4.0" has gained currency. It has its origins in a high-tech strategy project of the German government that comes with a wave of digitalisation and new electronic data networks. Machines communicate among themselves and with humans; sensitive robot systems are already being deployed. This is a scenario that may potentially stimulate an abundance of ideas, for instance in the areas of production, customer contacts or maintenance and repair. Employees will be required to think proactively and to contribute suggestions on how to improve operating processes, how to structure their own work, and how to deal with external contacts effectively.

Based on current experience, many of the innovations within the context of Industry 4.0 can be expected to come from start-ups. Cooperation between start-ups and the established industry will have to be improved, which will call for improvement suggestions concerning the organisational and cultural compatibility of these two very different types of companies. One essential theme here is how large enterprises might soften their sometimes extreme need for review procedures and security and start absorbing new ideas more quickly, become more agile and more prepared to take risks. Also in this context, employees' ideas will likely play a central role, as managers and external consultants can hardly be expected to deal with all the impending issues in efficient and effective ways.

This much for a number of important megatrends relevant for the development of idea management in the near future. *Diagram 2* provides a structured overview of the trends that should clarify how they relate to the reference frame of *diagram 1* above.

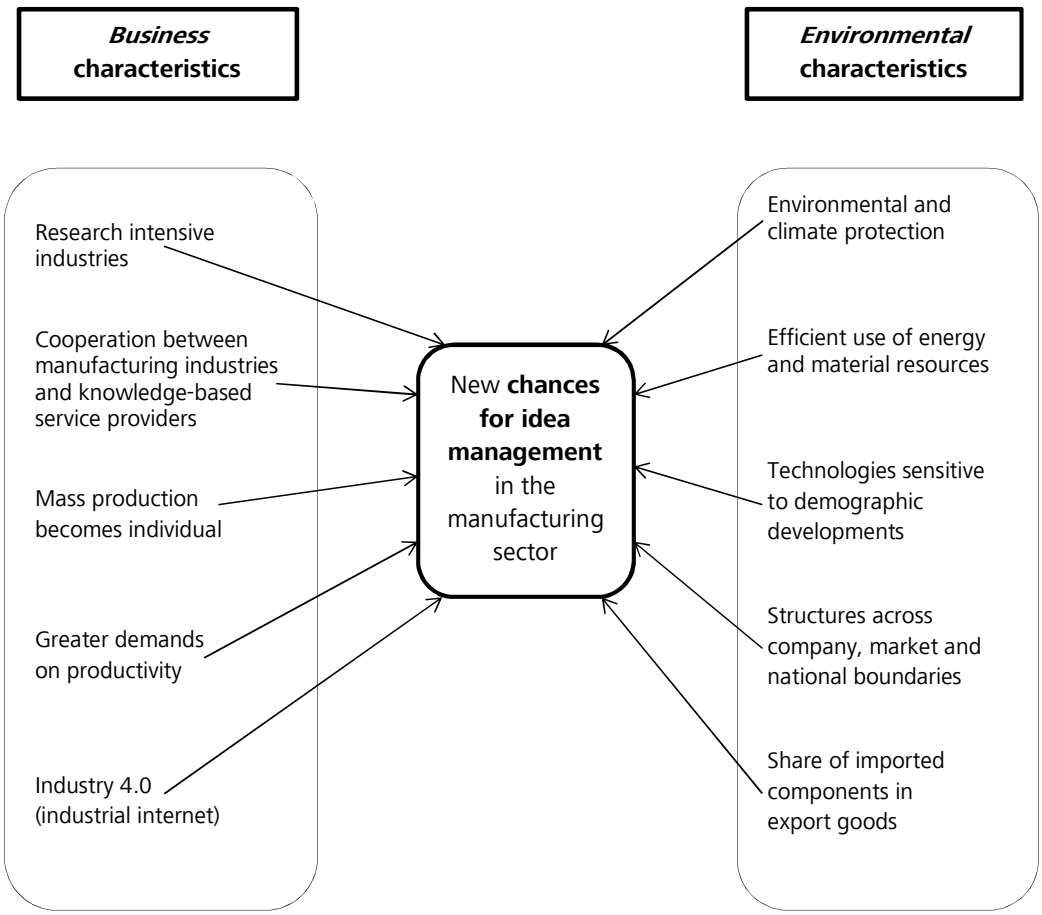

Diagram 2: Trends affecting future idea management

4. A research programme for the coming decades

Another question that naturally poses itself at this point is what the trends discussed in section 3 might mean for future research on idea management. In the author's view, the general approach will have to consist in continuous testing and adaptation of the reference frame of *diagram 1*. For one thing, the external and in-house-factors for instance will have to be expanded according to *diagram 2*.

When it comes to empirical verification, various methodologies suggest themselves. Past experience shows that much can be learned from intensive case studies of top performers (i.e. companies with a particularly effective idea management in place): can they maintain or even improve their key figures under changing contextual factors? This kind of approach should be followed up by broad questionings of idea managers. Views on the employer's part could then be contrasted with those of employees (surveys among staff, interviews with works council members).

In different area of research, the author has made fruitful use of a Delphi survey. In the field of idea management, experts from academia, consultants and practitioners from

companies could be questioned in two or three rounds on their expectations for the future. Such results would in turn provide ideas for the broader surveys and case studies.

Here is a list of suggestions for questions to be addressed by future research:

- Will traditional (employee-centred) idea management eventually open up to idea providers from outside (open innovation, crowdsourcing)? If so, how must the arrangement of the immediate action parameters of idea management (cf. *diagram 1*) be modified accordingly? In what ways will the action parameters on the part of internal and external idea submitters differ? Will integrated idea management remain an illusion or become a realistic option?
- Will idea management make stronger use in the future of the obvious interfaces with other management areas? Might it even be incorporated into one or another of them (cf. *diagram 1*)? Obvious candidates here would be quality, knowledge and innovation management.
- Industry 4.0 still in large part remains a vision. In the course of the development of "smart factories", the consequences for idea management should be monitored constantly. Possible research questions here might be: Will increased customer-orientation (customization) in mass production lead to a reduction of improvement suggestions from production workers in favour of external idea submitters? Might there in turn be new opportunities for employee suggestions in pre- and post-production departments (e.g. logistics, marketing, maintenance)?

These examples should suffice to illustrate that there is hardly a limit to the range of themes with regard to which future idea management research is called upon to engage in theory building, empirical testing and hands-on advice for practitioners. The reference frame of *diagram 1* can serve as a heuristic point of departure for future studies; it will have to be further expanded and refined by creative research that applies multiple methodologies.

5. Conclusion

Although its mutations have been substantial over time, idea management is in fact one of the most persistent management concepts ever, having been passed down through generations of managers and management theorists since its inception in Venice and Sweden in the middle of the 18th century (cf. the historical overview in *Thom/Piening* 2009, 1-12). In the German-speaking countries, idea management has been implemented mostly in the manufacturing sector ever since its introduction in Germany by Alfred Krupp in 1872 (for other regions, cf. *van Dijk/van den Ende* 2002; *Sergeeva* 2014).

Regarding its future, the conclusions to be drawn from the trends discussed in section 3 and 4 are obvious: as it has consistently been doing throughout its history, idea management must continue to adapt to changing economic, social, technological and ecological environments. Its core, however, remains the same: it must go on dealing with the question of "how to motivate and empower as many employees as possible to contribute constructive and creative ideas so as to continuously improve operational processes and results". If the necessary adaptations are administered with care, it will continue to do so successfully.

6. Appendix

What follows are synopses of the most important empirical studies in Germany and Switzerland conducted by the author or under the author's supervision. All essential results are presented in condensed form in *Thom/Piening* 2009.

Study no. 1: Losse/Thom (1977) (Germany)

Intensive case study at an SME. 11 superiors, 10 white-collar employees and 19 manual workers interviewed in depth. Careful selection of N=40 from approximately 300 employees with a view to achieve accurate representation of total staff structure. Additional document analyses and observation on location (manufacturing company).

Results on: Motivation for contributing suggestions. Attitudes towards and experiences with group suggestion scheme. First draft of reference framework for success factors of suggestion schemes.

Study no. 2: Post/Thom (1980) (Germany)

Survey of 12 leading German manufacturing companies. 509.280 employees in Germany. Number of evaluable suggestions for improvement: 102.735, i.e. more than half of the statistically recorded total number of suggestions in Germany (198.610); 12 times the number of suggestions recorded in Switzerland (8.340) or Austria (8.092); 3 times the number for the Netherlands (36.940). In other words, an extremely rich sample susceptible to all sorts of analyses.

Results on: Aims of suggestion schemes. Advertising methods (supplemented by document analysis). Incentive systems (premiums, immaterial rewards). Positioning of suggestion system within organisational structure and its consequences for performance (participation rates, acceptance rates of suggestions submitted). Relations between suggestion schemes and personnel development (especially identification of employee potential) investigated for the first time (in-depth qualitative analysis of this aspect later in *Thom* (1987)).

Study no. 3: Büsch/Thom (1982) (Germany)

Survey covering 71 suggestion scheme managers (on employer's part) and 108 works council members (on part of employees). 58 pairings in same company, thus multiple perspectives on same suggestion schemes.

Results on: Aims of suggestion schemes. Attitudes of top level management towards suggestion scheme and their impact on performance. Identification of potential areas of conflict with regard to aims of suggestion schemes: workload reduction (employee) vs. performance enhancement (employer). Flaws of suggestion schemes according to council members, identification of a wide range of opportunities for improvement.

Study no. 4: Vonlanthen (1995) (Switzerland)

80 organisations (74 companies, 6 public administration bodies) with advanced suggestion schemes.

Results on: Aims of suggestion schemes. Plans regarding further development of suggestion schemes.

Study no. 5: Etienne (1997) (Switzerland)

Case study of selected divisions of a large Swiss company with a very sophisticated suggestion scheme and a strict decision-making-chain model policy (all suggestions are submitted exclusively to direct superiors). Sample of N=400, 283 evaluable questionnaires.

Results on: Motivation for contributing suggestions (not just premiums, also immaterial rewards count!). Roughly 30% of superiors are "obstructors" in the view of employees! This poses a serious problem for the decision-making-chain model. A new, "hybrid" system is called for, where suggestions go both to direct superiors and the suggestion scheme administrator.

Study no. 6: Piening (2008) (Switzerland)

Survey among idea managers. 127 organisations presumed to have a sophisticated idea management system in place are contacted. 57 (45%) return the comprehensive questionnaire. 6 of the 57 describe their idea management scheme as "excellent". These are used as a benchmark against which to compare the other 51 ("Best Practice"). At two companies, additional case studies are conducted.

Results on: Reference framework for suggestion schemes/idea management developed over 30 years of research takes its current shape (cf. *diagram 1* above): external factors, in-house factors, human resources factors, indirect and direct action parameters, efficiency criteria. Identification of core objectives and design features of idea management systems. Coordination of idea management schemes with related management activities, in particular quality management (10 cases), knowledge management (5 cases), innovation management (3 cases). Further tendencies: little sympathy on the part of surveyed Swiss idea managers for the concept of "Open Innovation", which also allows company-external agents to initiate ideas; themes are explicitly advertised and people from outside can contribute; the best ideas earn rewards.

Supplementary case studies of: (1) Swiss Post as an example of a large organisation (result: much better situation now than that lamented by *Bumann* 1991); (2) Perlen AG (paper manufacturer), a medium-sized company featuring an idea management of enormous and long-term success.

Note: all six studies are mentioned in the paper; cf. the References section below.

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