

Wake-up Call for European Management: It's Innovation Time!

Prof. Hugo Tschirky, PhD, DBA16
Swiss Federal Institute of Technology (ETH)
European Institute for Technology and
Innovation Management (EITIM)

Since many years Europe's global competitiveness is suffering from decreasing world market shares. When trying to explain this threatening trend it becomes obvious that Europe's most unsatisfactory innovativeness represents the main adverse factor for this development. Unquestioned investigations reveal the fact that Europe's overall innovation competence – apart from numerous exemplary innovative companies - is lagging behind the US and especially Japan by roughly 40%. And considering currently ongoing innovativeness promoting activities there is no real perspective to close this innovation gap within the next 15-20 years.

Such activities include the so-called EU Framework Programs. In 2000 on the occasion of the often mentioned "EU Lisbon Conference" it had been – highly courageously – decided to transform Europe within 10 years into the "most competitive and dynamic knowledge-based economy in the world!" To this end the 6th and 7th programs were launched over 17 resp. 72 billion Euros. They focus on proposed research in knowledge areas such as health, biotechnology, IT, energy, environment, transport, socio-economic sciences, humanities, security and space. With respect to the enormous amount being spent to promote Europe's competitiveness the question on the effectiveness of such programs comes up. Conclusive investigations do not exist. However it lies in the nature of academic research processes that it does and will take quite a long time – 5 to 12 years – to provide knowledge which has successfully been transferred into significantly increased sales.

Moreover, regardless of available knowledge which may qualify for creating new products, noticeable sales increase due to new products – and thus increased competitiveness - come up only under the sine qua non condition, that companies master a qualified management of technology & innovation (MOT) competence. In other words: The company-internal innovation process – being the "final mile" on the long-standing path from initiating knowledge creation to the economically useful knowledge utilization – represents the factual challenge in order to improve competitiveness. In view of the mentioned European innovation gap it is not contradictory to conclude that this MOT competence is far from being an evident matter of course. On the contrary: although this relatively young discipline of company management is under rapid evolution it still experiences a stepmotherly existence in textbooks and education on general management.

The emergence of technology & innovation management occurred in connection with the ever increasing pace of technological change. In the past, the words "innovation" and "technology" could hardly be found in minutes of top management meetings. This is a very perilous situation. Because if top management decisions are taken without original technology and innovation management competence, the chances are considerable that both new innovative business opportunities as well as severe technological risks are underestimated or even not recognized at all.

It is amazing indeed that this crucial role of the “final mile” is not appropriately dealt with in current competitiveness promoting initiatives such as the EU framework programs. Instead the prevailing argumentation is expressing the opinion: “The more useful knowledge is available – the higher the competitiveness of companies”, a view which is quite far from the real business world.

What is the moral of this situation? It is realistic to admit that exclusively knowledge research driven initiatives per se will not bring about significant short- and midterm improvements of Europe’s unsatisfactory competitiveness on the global markets. Instead, substantial improvements can only be expected under the – again – sine qua non condition that European managers themselves take hold of their companies’ destiny and responsibly worry about the innovativeness of their enterprises.

To make the key point of this congress: The most promising way to cure the European innovation gap is the management’s proactive ambition to complete their decision competence today towards innovation excellence as a result of decisions which will be taken tomorrow.

In the past it has been a popular belief that innovation is kind of a “black art” which has to be left – and not too much interfered with - to especially talented people. However, apart from exceptions such as the often reported “post-it” case from 3M, widespread experience and also research tell us, that innovativeness is becoming a manageable quality of organizations, which results from well-conceived and systematically implemented and applied processes – though still requiring talented people.

In fact, in the context of a company, “innovation” means company-related changes which aim at improving its competitiveness and performance. Under this view, three main groups of innovations can be distinguished: *Firstly* innovations around products & services and related product and production technologies. *Then*, organizational innovations are important. They comprise managerial changes of structures and processes. *Thirdly*, business innovations are essential as well which mean new ways to conduct the business.

Under this necessarily broad perspective of innovation it goes without saying that innovativeness has to be a quality which is shared by all the disciplines such as product development, production, marketing, sales, finance and administration – in fact by all employees.

Innovative thinking – and of course innovative doing – is resulting from individual attitudes such as openness to the new, willingness to change, capability to communicate and cooperate, uninhibited creativity, and at the same time the readiness to take risks. These shared values are part of the company culture as a whole. The question therefore is, how can the company culture be influenced towards innovation excellence?

Generally speaking, the intentional influence on the company culture is often considered to be the highest art of management. In fact “leadership” can be defined as being synonym to “cultural management”. In practice, the individual’s attitudes and resulting behaviour is influenced in distinctly different ways: by leading examples and visible personal engagement of management members on all levels, by innovation culture enhancing initiatives originating from top management (“Innovation Competitions”), by supplementary education, and by a positive group dynamic within working, project and focused workshop groups.

The necessity for cultural changes arises for example in cases, in which companies take a strategic decision to follow a “growth through innovation” strategy after a period of consequent cost cutting. Obviously the new strategy requires different employees’ behaviour than in the past and thus challenges the management to reach a “cultural fit” between the strategic objectives and the underlying company culture.

It is often distinguished between incremental and radical innovations. *Incremental or continuous innovations* consist of stepwise improvements of existing products, services, processes and business models. The mentioned company-wide “innovative thinking and doing” is expressed in particular by the attitude of all employees to challenge daily their own work and its integration into the work processes in order to conceive opportunities to improve effectivity and efficiency of the work output. This attitude of continuous improvements – called KAIZEN – is deeply rooted in the Japanese society. It represents therefore a cultural value which is already inherent to Japanese employees, when they join a company. In contrast, for Western companies which try to excel in innovativeness it requires enormous efforts to “retrofit” the working culture with this value. Currently the company SWISS Airlines is successfully undergoing such a change process.

Radical or disruptive innovations consist of changes which are entirely different from the previous actualities. Typical examples: hybrid engine cars, digital cameras, data storage on CD's, TOYOTA production system, EASYJET business model, robot-guided surgery, etc. Daily business routine is teaching that developing incremental *and* radical innovations in identical processes and by identical professionals is hardly successful. Rather, in order to trigger “out-of-the-box” thinking, additional measures are recommended. As an example the applied research department of HILTI, the worldwide prosperous industrial company in the field of construction tools and applications, comprises not only technical disciplines but also a group of work psychologists. This group does thorough studies of customer work processes in order to feed the findings directly into the technical research work.

It is also beneficial to have two different – but correlated – processes for incremental and radical innovations. The latter one preferably is composed of highly interdisciplinary talents with proven capabilities of non-conform thinking. This was a solution which had been realized successfully when we were in charge of a company by the name of CERBERUS (leading in fire & intrusion protection, 3000 people, now part of Siemens) at a time when our patents were running out and we had to find ways to get out of the “commodity trap”. As a result we came out with a new multi-criteria fire detector for which – unique world wide – a warranty against false alarm was given.

In recent years two most promising possibilities to bring about radical innovations have come into the fore: It concerns on the one side the rapid emergence of start-up companies. Such units represent self-organizing and highly engaged entrepreneurial entities which usually tap on latest scientific knowledge which is transferred into unconventional market performance. This knowledge conversion is conducted by taking considerable technological, market and thus financial risks. Therefore observing the “start-up scene” very carefully offers established companies attractive opportunities to acquire radical innovations at significantly reduced risks and – above all – within a short time. This is why renowned companies such as EVONIC are closely tracking a “start-up watch list” as part of their strategic management tool kit.

On the other side, reliable innovation management research has revealed the fact that radical innovations quite often are being conceived by so-called “lead users”. As a consequence it is highly recommended to establish intimate contacts with this specific market community.

What are typical attributes of innovative companies?

In order to check the innovativeness of companies, so-called “innovation-audits” are conducted. They consist of roughly two hundred criteria - referring to “best-in-class” companies - which are focused on six areas of analysis. The *first area* concerns the business strategy: Does it relate to a meaningful innovation vision? Is it comprehensible to all employees? Does it contain convincing growth potential? Does it reflect the core competences and their development? Does it contain appropriate elements of “open innova-

tion”? Does it contain elements of balancing risks? Does it refer to clear financial goals such as ROE & ROI and appropriate innovation goals? Useful strategic innovation goals for example are the so-called “innovation rate” which expresses the percentage of yearly sales with new products or the number of radical innovations to be accomplished within the next three years.

The **second area** deals with the innovation output of the company: What is the “innovation image” with the customers? How does the yearly number of product innovations compare with competition? Does the current content of the “innovation pipeline” guarantee competitiveness? Which were the radical innovations in the past five years? Which are recent and future organizational and business innovations? Does the company jointly use resources with other organizations?

The **third area** is focused on the company structure as a whole: Minimal number of management levels? Explicitly designated technology competences on the top management levels such as board of directors (technology committee) and executive management (chief technology officer CTO, chief innovation officer CIO)? Well established structures of formal *and* informal communication throughout the company?

The **fourth area** deals with the quality and productivity of the innovation process: Is there a competent process management in place? What phases and measures are used to verify on-line the progress of process activities? In which way is the “fuzzy front end” (early-on identification of innovation potential) being handled? How are radical innovations being conceived? Are separate but interrelated processes in place for developing incremental and radical innovations?

The **fifth area** is concerned with the practiced management tools and systems: Are there methods to identify current and future market needs? Are customers and suppliers included in on-going and future product development projects? Are technology and innovation roadmaps in place? Does the company have an effective and dedicated “business intelligence” system?

The **sixth area** finally is focused on the company culture: Does it apply that “the biggest room on earth is the room for improvement”? Is “innovation” a clearly established issue on the top management meeting’s agenda? Has creating a throughout innovative company culture explicitly top-priority? Has a meaningful innovation vision been communicated to all employees and business partners? Do employees “speak” the WE or the THEY language? How does project development time compare with competition? Concept and quality of the internal proposal system? How often have ideas from external sources been successfully transferred into the company? Examples of convincing innovation signals from top management?

To sum up:

In view of the promising development of Management of Technology and Innovation, coping with challenges of innovation-based competitiveness is no longer neither “black art” nor the result of “sheer luck” but rather the consequence of qualified leadership. Instead of helplessly standing by when confronted with technological change, and rather than expecting substantial competitiveness improvements from – external – large-scale promotion programs, it is up to each enterprise management to take the decision today to adopt available innovation management experience of “best-in-class” companies. It doesn’t require a crystal ball to safely predict that innovativeness will be the prime factor to distinguish between successful and unsuccessful enterprises.