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## **Promoting employee-driven innovation: putting broad-based innovation policy into practice**

### **Introduction**

Finland generally places near the top of international comparisons of innovation activities and systems (e.g. Dutta 2012; European Commission 2012; OECD 2012). Back in the early 1990s, Finland was the first country in the world to adopt a framework for science and technology policy that was based on systematic adoption of the concept of a national innovation system (Miettinen 2002, 15). However, criticism of the framework's strong and one-sided orientation towards technological innovations and domination by engineering and natural sciences began to increase in the 2000s. In response to the criticism, the Cabinet of Prime Minister Vanhanen assigned in 2007 the Ministry of Trade and Industry to appoint a high-level group with the task of drawing up a proposal for a new national innovation strategy. The group, chaired by former Prime Minister Aho, submitted a proposal for a new kind of "broad-based innovation policy" (Aho et al. 2008). The central idea of the proposal involved further expanding the target of innovation policy to give more significance to non-technological innovations and increasing the positive joint impacts of technological and non-technological innovations. The proposal also placed greater emphasis on the role of customers, users, ordinary employees and communities of different kinds in innovation. The Government approved the central recommendations of the strategy proposal in October 2008.

However, some international experts have suggested that Finland has not progressed very far in applying its new innovation thinking. For example, Sabel and Saxenian (2008) argue that in key industries, such as the forest products industry and the information and communications technology (ICT) sector, Finnish companies have focused too heavily on development paths that were successful in the past and on incremental process innovations at the expense of other types of innovations. An international evaluation of the Finnish innovation system considers the content of the new broad-based innovation policy to still be fuzzy, vague and potentially even "too broad" (Veugelers et al. 2009, 20–41). Based on recent Nordic comparisons, Finland especially trails Denmark with regard to user-driven innovation (Bisgaard & Høgenhaven 2010) and human resources-related framework conditions of innovation (Krarup et al. 2009).

Denmark can be considered a leading European country in terms of how actively ordinary employees participate in innovation in companies. This is the case despite the fact that in Denmark government has had a lesser role in boosting and co-ordinating innovation activities than in Finland and the country has not adopted the framework of a national innovation system as systematically. The production of innovations is more dispersed within the business field. One of the special features in Denmark is that small and medium-sized enterprises have an important role in generating innovations. Many Danish companies also actively encourage ordinary employees to participate in the development of products, services and operating methods. Trade unions have supported businesses in this development. The fact that ordinary employees actively participate in development and innovation is linked to the idea of lifelong

learning that is highly valued in Denmark. Employees' abilities to participate are also supported by the fact that employees often have good supporting networks available outside their own business, since the mobility of employees is at a higher level than in most other countries in Europe (Høyrup et al. 2012; Kristensen et al. 2011; Rocha 2010).

It is possible that the technology and system-oriented but narrow perspective on innovations adopted in Finland has also in part acted as a barrier to employees' participation in innovation (cf. Miettinen 2002; Piirainen & Koski 2004; Schienstock & Hämäläinen 2001). Thus, the observations outlined above and analyses based on the Eurofound's European working conditions studies (Lorenz & Lundvall 2011; Valeyre et al. 2009) indicate that employees' participation in development and innovation has in Finland more commonly occurred within the framework of lean thinking – i.e. governed by standardisation, strict quality criteria and within rather narrow limits set by management – than, for example, in Sweden or Denmark. In addition to differences in the focus and content of innovation policy, the above differences among Nordic countries can be explained by the fact that the tradition of developing work organisations by means of socio-technical or “human-centred” approaches as opposed to lean thinking is thinner on the ground in Finland than in other Nordic countries (Gustavsen 2007).

## **Aim and content**

This paper examines broad-based innovation policy in practice, focusing on activities of the “Liideri – Business, Productivity and Joy at Work” programme (2012–18) of Tekes – the Finnish Funding Agency for Technology and Innovation – to promote employee-driven innovation (EDI). This is used as an example of a means of integrating workplace development into the new concept of innovation policy in accordance with the proposal of the Aho working group. We consider this case especially interesting – not only because Finland is usually ranked as one of the leading-edge countries in Europe owing to her systematic innovation policy approach (see above) – but also because Finland has gained a reputation as one of the leading countries in Europe in workplace development in the 2000s as well (e.g. Brödner & Latniak 2003; Eeckelaert et al. 2012; Gustavsen 2007; Kok 2004). Today, Tekes is a key player in workplace development, too. Since 2008, one of the tasks of Tekes has been to fund “innovative research and development of working life” and to improve the quality of working life through its activities.

The paper starts by clarifying the concept of EDI. Thereafter, we track down the relationships of EDI with two underlying policy discourses – namely, the tradition of industrial relations-based workplace development policy and that of technology-oriented innovation policy. This is followed by a presentation of the Liideri programme and its conceptual framework for the promotion of EDI. In conclusion, the paper discusses challenges related to EDI-promoting policies.

## **The employee in new innovation models**

In *The Future of Management*, Hamel (2007) stresses the need for a radical reform of management principles that have their roots in the history of the industrial period. He states that management thinking that is centred on control and ensuring people's obedience and diligence is no longer a viable choice with regard to creating value and achieving a competitive advantage in companies. Hamel suggests that up to 80% of people's value

creation potential for the organisation is currently linked to their initiative, creativity and passion. Hamel is not alone in his views. Similar views of the need for a radical reform of management principles in an increasingly knowledge-based and service-oriented economy have been presented by many other writers in recent years (e.g. Birkinshaw 2010; Heckscher 2007; Pink 2009).

In recent years, innovation research has focused on finding new models that would allow companies to speed up their innovation activities and make better use of diverse types of knowledge in support of these activities. Discussion on the new models has also highlighted a more active and diverse role in development and innovation for the companies' ordinary employees. Well-known new concepts with a focus on this aspect include "high-involvement innovation" (Bessant 2003; Dabhilkar & Bengtsson 2007; Hallgren 2008), "employee-driven innovation" (Høyrup et al. 2012; Kesting & Ulhøi 2010) and "practice-based innovation" (Ellström 2010; Melkas & Harmaakorpi 2011).

The role of ordinary employees contained in the new innovation models differs fundamentally from traditional Tayloristic view. The heart of Tayloristic doctrine has been divorce of planning and doing, fragmentation of work tasks, and minimisation of skill requirements and job-learning time (e.g. Littler 1982, 50–58). Regarding the role of employees, the new innovation models include similarities, but also different focuses, in comparison with the lean thinking that became prevalent in the early 1990s and its innovation and development concepts.

The central difference between lean and Tayloristic thinking can be considered the elimination of the strict line between planning and doing so that employees and their teams in lean production are given responsibility for continuous development. Lean thinking can be characterised as "democratic Taylorism", in which use of development methods and tools is taught and responsibility for development delegated from lower and middle management and specific support functions to teams at the operative level. The guiding principle of lean thinking is standardisation of working methods and procedures. Standardisation serves as a foundation for their collective application in teams, their continuous improvement and the subsequent learning as well as for disseminating "best practices" based on these methods and procedures throughout the organisation. Lean thinking also requires a change in management and supervisory work: a conceptual redefinition of the management structure from a traditional *control* structure to an enabling *support* structure for employees and teams (e.g. Adler 1993; Adler & Cole 1993; Krafcik 1988; Womack et al. 1990).

However, the planning ideology of lean thinking *does not* differ from Taylorism – in contrast to, for example, human relations theories of organisation or socio-technical systems design – in its view of the content of operative tasks. According to lean thinking, breaking tasks down into small entities is often justified for reasons of standardisation and the opportunities for collective learning and continuous improvement that it offers. The starting point for lean thinking is the idea that employees' motivation or job satisfaction does not so much come from "enriched", varied or diverse work but from the opportunity to do work in a productive manner and contribute to the collective problem solving required by this process.

Lean thinking primarily approaches the employees' role in development and innovation from the perspective of production management principles and techniques (e.g. Womack & Jones 1996). With regard to new innovation models, *high-involvement innovation (HII)* approaches the employees' role from the perspective of learning theories. Its central theoretical

framework is a resource-based view of the organisation. The basic idea of HII is that an organisation can develop its abilities in a systematic manner and develop into a learning organisation. Bessant (2003) differentiates between eight of key abilities, all of which are associated with the ability of the organisation and its personnel to continuously improve organisational activities. In particular, the approach emphasises the importance of the personnel's involvement at all levels of the organisation. The personnel's role in development is not limited to incremental innovations; rather, as the organisation's ability of continuous improvement develops, the ability of the organisation and its personnel to also produce radical innovations is expected to increase.

*Employee-driven innovation (EDI)* is a broader umbrella concept that is not as closely linked to a specific theoretical view as HII. Rather than being a management or organisation-driven concept to the same extent as lean thinking or HII, EDI makes employees' internal desire for creativity, learning and development a clearer starting point. At a general level, EDI refers to active and systematic participation of employees in ideation, innovating and renewing of products and services and ways of producing them, with a view to creating new solutions that add value to customers. Within this generic definition, Høyrup (2012, 7–10) has more specifically identified EDI processes on three different levels. In its least institutionalised form, EDI refers to self-organised (continuous) remaking of jobs and activities. Employees plan and implement solutions that help them solve work-related challenges and problems in a creative manner that is productive for the entire organisation. The second level is (fully) *employee-driven* innovation that produces solutions that arise from employees' self-initiated ideation and are both recognised and acknowledged by the management. The most institutionalised level is *employee-involving* innovation. This refers to solutions based on commissions by management, customers or various stakeholders in which the employees have actively participated.

*Practice-based innovation (PBI)* is a broad umbrella concept in the same manner as EDI. Its roots lie in discussion on the differences between different methods of knowledge creation in innovation research. Harmaakorpi and Melkas (2011) use the term “practice-based innovation” for innovations that arise by means of learning by doing, using and interacting (DUI mode of innovation) for which the starting point is practical problems observed by actors with diverse competence (Mode 2), as opposed to science or technology development (STI mode of innovation). The writers further divide practice-based innovations according to whether they are typically based on interaction and co-operation *between* organisations (DUI/Mode 2a) or interaction and co-operation *within* an organisation (DUI/Mode 2b). In the latter type in particular, employees play a central role. The key requirement for ensuring that employees have a significant role in innovation is the elimination of organisational “silos” that prevent interaction and co-operation. In the DUI/Mode 2b format, practice-based innovation focuses especially on organisational and other social innovations and service innovations.

Table 1 summarises the main differences in the four approaches with regard to employees' role in development and innovation. The approaches diverge from each other not only in terms of theoretical rationale and their central innovativeness factors but also in their management rhetoric. Lean thinking is more clearly based on a rational management rhetoric that emphasises the importance of production management, explicit knowledge and standardised operational processes. With regard to management rhetoric, PBI differs most clearly from lean thinking in that it stresses a perspective that emphasises the importance of normative management thinking, work community factors and tacit knowledge.

Table 1. Employees' role in development and innovation: comparison of different approaches.

	Lean thinking	High-involvement innovation HII	Employee-driven innovation EDI	Practice-based innovation PBI (DUI/Mode 2b)
Innovation type that is the object	Mainly incremental	Mainly incremental Increasingly radical as innovation capability develops	Incremental and radical	Mainly incremental
Central approach to innovations	Production management	Learning theories	Learning theories	Innovation research Organisational culture
Underlying management rhetoric	Rational	Mainly rational	Rational-normative	Normative
Key property promoting innovation in the organisation	Standardised operational processes	Organisational innovation capability comprising eight key abilities	Enabling management	Interaction and co-operation within the organisation
Conceptual degree of explicitness	A group of principles and generally applied techniques	Explicit framework	Broad umbrella	Broad umbrella
Key sources	Adler (1993), Adler & Cole (1993), Womack & Jones (1996)	Bessant (2003)	Høyrup (2012), Kesting & Ulhøi 2010	Harmaakorpi & Melkas (2011)

### Employee participation in different policy discourses

Employee participation has long been a central theme in workplace development and working life research (e.g. Crouch & Heller 1983; Garibaldi & Telljohann 2010). Employee participation can be divided into *representative* participation by employee representatives, works councils or other similar organs and *direct* participation by ordinary employees. Representative participation can be related to issues that concern several employees, covering in some cases the whole company or workplace. Direct participation usually focuses on individual employees' or teams' own immediate work tasks, work organisation and working conditions in the form of consultation or delegation (Fröhlich & Pekruhl 1995). In workplace development that originates from the industrial relations (IR) framework, representative

participation in particular, but also direct participation, has been examined from the viewpoint of the employees' right to participate in decision-making and to be heard or at least informed in addition to the viewpoint of the benefits gained by the companies. Underlying the "benefit aspect" has been a constructivist view. According to it, the role of employee participation in workplace development is not – and should not be – to ensure frictionless adoption of a ready-made set of "high-performance work practices", but to help companies implement collaboratively *constructed* changes in their work and organisational practices for the improvement of productivity, working conditions, job satisfaction or other quality-of-working-life-related issues (Alasoini 2011, 25).

In industrial policy or traditional, science and technology-oriented innovation policy, the participation of employees has typically not been made an issue in any way. If direct or representative participation has been discussed at all, it may have been seen as a method of overcoming resistance by employees and making them commit to the adoption of new solutions, developed jointly by the management and different experts. In new broad-based innovation policy discourse, a growing interest in agile, open and distributed innovation models has increased interest also in the role of ordinary employees, leading to a more versatile perspective on the significance of employee participation.

In the new discourse, employees' active role in innovation is regarded as an increasingly important competitive factor to companies for at least three reasons: firstly, market changes will take place faster and they will become more difficult to predict. Being able to react to changes rapidly requires continuous feedback from customers and users. Employees working at the customer interface have an important role in producing this information. Secondly, the economy will become networked. Due to networking and outsourcing, producing innovations will be increasingly spread out within the business field from big corporations to smaller businesses that do not have the same kind of specialised R&D personnel as larger companies. They have to innovate by encouraging their ordinary employees to participate on a broad front. Thirdly, the skills and competencies of employees will improve. The general level of education and know-how of employees has improved and companies employ more and more people with the ability to see larger entities and participate in solving even complex problems. An increasing number of employees perform now knowledge-intensive work that essentially includes problem-solving.

The rationale of employee participation in the form of EDI, promoted as part of a broad-based innovation policy, differs from both the rationale of traditional workplace development – which sets out from the IR framework – and the rationale of traditional, technology-oriented innovation (Table 2). The new rationale "exceeds" the traditional IR-based viewpoint concerning employee participation by giving significant importance to broad employee participation – or, in more dynamic terms, mobilisation – in development and innovation and making it a key success factor in businesses where fast renewal and innovation are central competitive factors. The new rationale "exceeds" the viewpoint of traditional technology-oriented innovation activity, as well, by giving significant importance to broad employee participation in development and innovation, not as a method of persuasion, but as a factor for generating collective learning and reinforcing a sense of inclusiveness among ordinary employees in connection with rapid changes in the workplace (for more details, see sub-section "impacts of employee-driven innovation" below).

Table 2. The rationale of employee participation in different policy discourses.

	Industrial relations-based workplace development policy	Science and technology-oriented innovation policy	Broad-based innovation policy
Forms of participation	Direct and representative participation	Direct and representative participation	Employee-driven innovation
Typical objects of participation	Work tasks, work organisation and working conditions	New products and processes	New products, services, processes, business models, work organisation, etc.
Rationale of participation	<p>Employees have the right to participate through delegation, consultation, hearing or having access to relevant information.</p> <p>Collaboration between management and employees improves the quality and novelty value of new solutions.</p>	<p>Participation helps</p> <ul style="list-style-type: none"> <li>- overcome employee resistance to the adoption of new solutions.</li> <li>- adapt solutions, developed jointly by management and experts, to better suit local conditions by giving employees an opportunity to implement small adjustments.</li> </ul>	<p>Participation</p> <ul style="list-style-type: none"> <li>- is a key success factor in complex environments where networking, fast renewal and innovation are central competitive factors.</li> <li>- generates collective learning and reinforces a sense of inclusiveness among employees in connection with rapid changes.</li> </ul>

### The Liideri programme in a nutshell

In 2012, Tekes launched a new programme, entitled “Liideri – Business, Productivity and Joy at Work”. Liideri is a programme for the development of business, in which companies renew their operations through developing management and forms of working and actively utilising the skills and competencies of their personnel. On the one hand, Liideri is a follow-up programme to the previous national workplace development programme, in which more than 1,800 development projects were funded in Finnish workplaces between 1996 and 2010. On the other hand, the purpose of Liideri is to be a “next-generation” workplace development programme that represents an approach in keeping with a broad-based innovation policy (Alasoini 2012). At the project level, this means, first and foremost, an interconnecting link between traditional objectives and targets in the development of working life, such as work productivity, quality of working life and well-being at work, and a link between them and corresponding objectives and targets in the development of products, services and business operations. The programme aims to produce management and organisational practices that renew business activities and working life, as part of a broader national workplace development strategy co-ordinated by the Ministry of Employment and the Economy.

The Liideri programme has three focus areas. The first of them is *management 2.0*. This concept refers to management principles, processes and practices, which help an organisation to promote the initiative, creativity and innovation potential of personnel, with a view to achieving competitive edge based on them. The second focus area concerns *employee-driven*

*innovation*, using the framework presented by Høystrup (2012) as a starting point. Thus, “employee-driven innovation” in the programme is a much broader concept than, for example, “direct participation” aimed at one’s own work duties and work environment or “continuous improvement” taking place within limits specified by the management and aimed at incremental innovations. The programme supports research, development and dissemination of information on management processes and forms of work organisation and working, which promote employee-driven innovation in Finnish workplaces. The third focus area concerns *new ways of working*. This concept refers to work, which transcends the boundaries of time-honoured temporal, spatial and organisational patterns and forms of work, or which in some other recognised way embody principles of management 2.0.

The primary target group in the Liideri programme consists of small and medium-sized enterprises, which pursue growth from the innovation-derived competitive edge of their business activities, utilising and developing preconditions for active and systematic participation of their personnel in innovation and other development activities. Other kinds of companies and public organisations can also receive funding for projects that show high innovative value and can act as important sources of ideation and inspiration for other organisations. The projects should aim at extensive renewal of their ways of operation, build on extensive networking and also permit other organisations to have access to the key results of their projects. Consultants and (action) researchers work in projects supporting companies, just as in earlier Finnish programmes to develop working life.

The aim is to get at least 300 companies or other organisations to launch programme-funded projects, of which at least 70% should bring about clear and measurable improvements in productivity and well-being at work. In addition, the aim is for at least 1,000 companies or other organisations to make use of the programme services or gain concrete benefits from the programme for running their own business (or related) activities.

### **Conceptual framework for promoting employee-driven innovation**

As demonstrated above, EDI is not a management or organisation-driven concept to the same extent as lean thinking or high-involvement innovation. However, this does not mean that it doesn’t require strong management support (Hansen et al. 2012; Høystrup 2012; Kesting & Ulhøi 2010). It could even be assumed that successful EDI requires change that extends all the way to the principles of management, as called for by Hamel (2007). This view is also the starting point for the Liideri programme’s conceptual framework for promoting EDI (Figure 1). Each section of the following figure is briefly examined below.



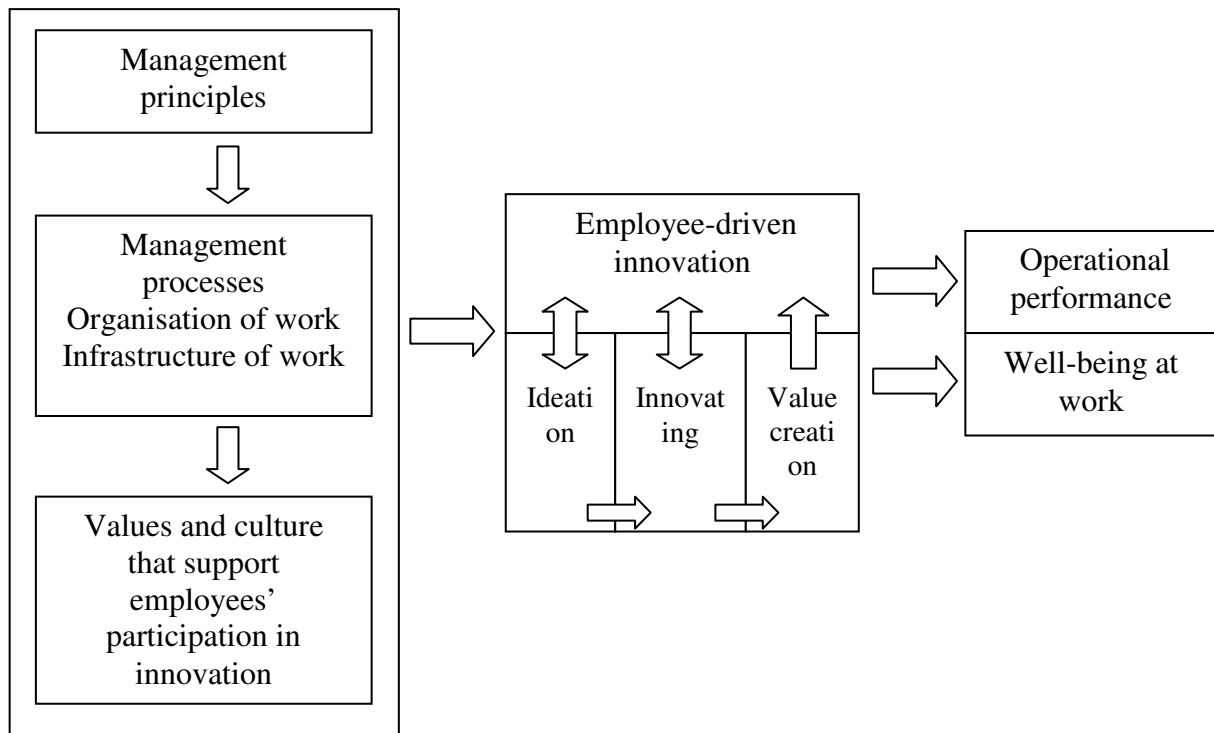


Figure 1. Liideri programme's conceptual framework for promoting employee-driven innovation.

### *Factors enabling employee-driven innovation*

*Management principles* refer to fundamental assumptions or beliefs that guide management concerning the basic nature of people, what motivates people and what makes them perform well (cf. Birkinshaw 2010, 36–37). The fundamental questions include the extent to which people can be trusted, the amount of power and responsibility they can be given, and the extent to which people can be motivated by means of purely financial vs. other kinds of incentives. A business environment in which companies increasingly compete with the competitive advantages arising from innovations in their business operations requires different principles for managing people than those needed in mass production based on standardisation, stability, specialisation and exploiting economies of scale. Hamel (2012, 131–133) has proposed that management in the future should be based on the same values as its central technology architecture – the interactive internet. Such values, according to him, are community, transparency, freedom, meritocracy, openness and collaboration.

*Management processes* refer to an entity of interconnected practices that apply to management, helping the organisation reach its objectives (cf. Birkinshaw 2010, 36–37). Organisations have generic management processes that are independent of the form of ownership, industry or business model. Different organisations may, however, also have specific management processes that are tied to the business model. One of them is innovation management. Generally speaking, innovation management refers to “such management activities that aim to enhance the creation and utilisation of innovations” (Kettunen et al. 2008, 38). One may assume that in organisations that seek lasting, long-term competitive

advantage by promoting EDI, the significance of a number of supporting management processes to innovation management is emphasised. These include, in particular, knowledge management (e.g. how to develop the individual and communal knowledge and creativity of employees), diversity management (e.g. how to utilise the different knowledge and capabilities of various types of people), human resource management (e.g. how to create jointly accepted rules and practices that support people's capabilities to utilise their knowledge and creativity) and value management (e.g. how to create mutually understood and accepted values and goals that direct, inspire, energise and mobilise people).

The new principles of management should also be reflected in the principles and practices applied to *forms of work organisation and working* and should be compatible with them. Such principles and practices of forms of work organisation and working differ in many ways from the standardisation, centralisation, vertical integration, functional differentiation and organisational thinking based on fragmentation of work tasks that are characteristic of industrial mass production. Principles that enhance people's initiative, creativity and commitment with regard to forms of work organisation and working include:

- decentralisation (authority and responsibility is delegated)
- self-steering (work units have a lot of autonomy in their operations)
- process-orientation (work units are responsible for large entities of the process)
- customer-orientation (work units are steered in accordance with the demands of customer value creation)
- emergence (the organisation operates and develops also from the bottom up)
- team base (authority and responsibility is taken on a communal basis)
- networking (work units utilise different kind of partnerships)
- agility (the organisation has the ability to make structural changes and renewals)

New forms of work organisation and working that are based on these general principles can be very different. Common to all of them, in particular, is the fact that management becomes a more shared activity and that work is done in a more individual ways and is more decentralised in terms of being done in different locations, at different times and with changing groups of people in different networks. Another important precondition for dissemination of new forms of work organisation and working is the continuous development of ICT-based applications. This creates new opportunities for digitalisation of data reserves, continued reduction of the cost of data and information processing, and increasing connectivity of various types of data, information, matters and functions.

*The social infrastructure of work* refers to various standards, systems or established practices that help people successfully handle their work tasks or solve problems encountered at work. Typical examples of the highly institutionalised social infrastructure of work in Finnish work organisations include quality systems, information systems, enterprise resource planning systems, reward systems, working time systems, occupational health and safety systems, occupational health care systems, and labour-management negotiation and co-operation systems. Furthermore, supervisory work, facility solutions or various established network and co-operation relationships can also be considered to be corresponding social infrastructure of work. New ways of managing people and organising work also require changes in these structures. The difficulty in changing the social infrastructure of work, underestimation of its importance during changes or mutually conflicting steering impacts of its various sub-systems can represent major barriers to organisations' possibilities for renewal (e.g. Heckscher 2007, 135–169).

Organisations can achieve *values and a culture that support the personnel's participation in innovation* by means of new principles of management and the management processes, forms of work organisation and working and social infrastructure of work that reflect those principles. The foundation for such values and culture is a kind of a moral contract between the organisation's management and employees that can, in practice, be seen as a fundamental, jointly accepted code of conduct (Ghoshal et al. 2001; Järvensivu & Piirainen 2011). A moral contract contains a shared view of what kind of conduct is correct, sensible and desirable in the organisation and what kind of remuneration employees are entitled to in return for their work contributions and the deployment of their skills and competencies. Remuneration does not refer only to financial compensation but also to intangible rewards such as trust, respect, loyalty, safe employment relationships or employability.

### *Employee-driven innovation as a process*

The process of EDI is divided into three phases in Figure 1: ideation, innovating and value creation to customers. For successful EDI activities to occur, it is important that ideation and innovating and learning, which is derived from the value creation process, are seen as *a communal process* in teams, networks or other communities. The communal nature (i.e. the opportunity to make use of different types of knowledge and create deep commitment) and the dynamism (i.e. the opportunity to act rapidly) of the new innovation thinking are what make it stand out from traditional direct participation and suggestion schemes. Collaborative development activities can take place in or be supported by various forms of organising, such as operational teams, cross-functional development groups, idea workshops based on the broad participation of employees, change agent networks, cross-organisational development, innovation and learning networks, or interactive virtual forums (incl. social media).

Different arenas can supplement each other and have varying functions in innovation and development. Self-managing operational teams, for instance, may be at their best in producing small, incremental innovations and development ideas with fairly limited impacts. Networks of several organisations and various interactive virtual forums provide forms of organising with the opportunity to combine different types of knowledge and create the prerequisites for a new way of thinking that could lead to radical innovations as well.

The communal nature of EDI also applies to learning. The arrows in Figure 1 that point backwards from the ideation, innovating and value creation phase illustrate how innovation production and organisational learning are, at best, interwoven with each other into a two-part process of knowledge creation that simultaneously produces innovations and organisational learning. A view such as this differs from the traditional notion regarding the emergence of innovations and learning in the workplace. Traditionally, these have been considered as two separate processes: expert-oriented innovation generation and knowledge acquisition based on training or learning on the job. Several authors (e.g. Ellström 2010; Høystrup 2010; Nielsen & Lundvall 2007) emphasise, however, that innovations typically emerge through interactive processes. The generation of knowledge manifests itself as a process which, on the one hand, creates product, service and process innovations, but at the same time also generates learning among the participants in the innovation process, thereby improving the company's innovation capabilities for the future. Innovations and organisational learning are, at best, the conscious, mutually supportive results of the same process.

### *Impacts of employee-driven innovation*

Figure 1 separates the impacts of employee-driven innovation into operational performance and well-being at work. Direct and indirect impacts can be examined separately for both of these items (Table 3).

Table 3. Various impacts of employee-driven innovation.

	Direct effects	Indirect effects
Operational performance	Improvements and renewals in products and services and in ways of producing them	Broad-based organisational learning
Well-being at work	Increased “employee-friendly” solutions in products and services and in ways of producing them	Increased experience of inclusiveness in change situations among employees

With regard to operational performance, direct impacts arise as the accelerated pace of renewal for products, services and their production resulting from EDI increases the organisation’s ability to produce value for its customers. Better value creation ability can be seen, for example, in the developing properties of products and services, reduction in operational disturbances, shorter product and service lead times or increased material and energy efficiency in operations.

Indirect impacts on operational performance are related to the organisational learning achieved by means of EDI. Organisational learning is broad-based when ideation and innovating are carried out as genuine communal processes that also include the opportunity for joint critical reflection and evaluation of the process. The potential strength of EDI for other forms of innovation activities lies in the opportunity that it provides for producing more broadly-based organisational learning within the organisation. This kind of learning means that, during the process of ideation and innovating, the organisation can simultaneously develop its own way of ideation and innovating and thus achieve long-term competitive advantage for its operations.

The direct impacts of EDI on perceived well-being at work are associated with the fact that employees’ active and systematic participation means that issues of importance to them are better taken into consideration in the renewals. However, the indirect impacts on well-being that result from the personnel’s experience of inclusiveness may be even more important. In particular, the opportunities to exert influence and utilise one’s skills and competencies, together with a feeling of the importance of one’s contribution and appreciation for it in conjunction with changes and renewals, contribute to the experience of inclusiveness.

The significance of inclusiveness can be considered through the concept of *a sense of coherence* developed by Antonovsky (1987). This concept has recently been used to examine the problems of well-being at work during changes in working life as well (Docherty et al. 2008). Rapid changes jeopardise the prerequisites of people to see life (or working life) for their part as a comprehensible, manageable and meaningful entity. In a situation where

challenges arising from change exceed people's resources, negative stress will arise and consequently cause negative effects on health and well-being. Inclusiveness can be regarded as boosting the sense of coherence in all three dimensions: firstly, inclusiveness in the process of change and innovation helps employees to increase their *comprehension* of events in their own organisation and its environment by improving their possibilities to find logical connections between various issues and phenomena. Secondly, inclusiveness helps employees to increase their sense of *control* over issues and events that affect them and their work. The sense of control should, of course, reflect some kind of realistic possibility of control in order for it to be sustained in the long term. Finally, inclusiveness helps employees find *meaningfulness* in things going on in their own organisation and in its environment. This increases opportunities to assign positive connotations to different issues and commit to them more strongly.

## **Summary and conclusions**

This paper examined employee-driven innovation as a new target of research and development and as a bridge between traditional workplace development policy and innovation policy. A special focus of the paper was Tekes' Liideri programme and its framework for promoting employee-driven innovation. This was considered an example of the new broad-based innovation policy in practice. In relation to traditional IR-based workplace development, EDI includes a new rationale regarding employees' participation and a new "process-like" view of the quality of working life. From the viewpoint of traditional technology-oriented innovation activities, EDI means expanding the group of relevant innovation actors and detachment from the concept of a narrow, institution-centred innovation system.

As a concept, EDI is not as management or organisation-driven as some of its parallel concepts. However, this does not mean that it has no need for strong management support. On the contrary, the credibility and long-term nature of the support require management principles that recognise and acknowledge the role of ordinary employees as active and legitimate subjects in conjunction with change. Extending the reform to the principles of management is often necessary, because internal knowledge – and in particular knowledge that derives from lower levels of hierarchy, i.e. the shop-floor level and ordinary employees – has in many organisations been traditionally undervalued in comparison with knowledge obtained from external sources. There is no reason to limit the scope of employee-driven innovation to incremental improvements. The analyses of both Kesting and Ulhøi (2010) and Menon and Pfeffer (2003) suggest that also radical innovations are often employee-driven; they derive from doing something unique, valuable and difficult to imitate or plan in detail through standard management procedures. Renewal of management principles and management processes has been given an important role in the Liideri programme's framework for promoting employee-driven innovation.

It would be naïve to assume that employee-driven innovation and the innovation democracy or innovation mainstreaming that can, at best, be achieved through such activities would be simple to implement, or that they would automatically lead to an increase in well-being at work. The "technical" component of management in the form of management skills, styles, practices, tools, etc. is closely interwoven with the more "ideological" component deriving from the hierarchical power and ownership structures inherent in capitalist market economies. A fundamental reform in management thinking towards broad participation of employees in

innovation, for example, is not a matter of pure technical rationality, but a matter which in many ways touches upon the underlying power and authority relations within companies.

Without sufficient planning and managerial and organisational know-how, attempts to promote EDI can lead to new problems in well-being at work as well. For example, work load will increase if innovating is mainly experienced as an extra duty; employees will become frustrated if the time used for innovating and the work contribution do not lead to visible results; feelings of inequality will become more common among employees if they feel that the resources, results or effects of innovating are not distributed equally; or tensions and conflicts within the work community will increase and co-operation will deteriorate if innovating is not seen as a communal process. Such matters have not historically been on the agenda of innovation policy or innovation management (Kettunen et al. 2008; Tidd et al. 2001).

Broad-based innovation policy does not refer only to a linear expansion of the traditional innovation policy area to some new areas. For example, integrating employee-driven innovation activities into the new concept of innovation policy will also create radically new types of question-setting. Responding to them will require a new kind of understanding and competence at the policy level and open-minded rethinking of management processes at the company level.

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