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The European Journal of Workplace Innovation (EJWI) is an open-access, net-based, peer reviewed and English-language journal. The Journal invites research-based empirical, theoretical or synoptic articles focusing on innovation and workplace development. The aim of the journal is:

- To develop insights into workplace innovation
- Provide case studies from Europe as well as comparative studies from other continents
- Develop and present new theories in the field of workplace innovation
- To increase international publication within the field
- To become an important publication channel for workplace innovation research as well as the international research community

EUROPEAN JOURNAL OF WORKPLACE INNOVATION

Table of Contents

EUROPEAN JOURNAL OF WORKPLACE INNOVATION

Editorial:

Richard Ennals

Editor in Chief

European Journal of Workplace Innovation

The original intention was to publish this issue of EJWI on 8th October 2018, on the first day of the international conference: Coping with the Future: Business, Work and Science in the Age of Digitalisation and Sustainability, which was hosted by the University of Agder 8th - 10th October. The conference brought together three one day events, and was designed to lead to publications in several international journals, including EJWI.

Details of the conference are available at http://copingwiththefuture.com/, together with streamed keynote presentations. The book *Coping with the Future: Rethinking Assumptions for Society, Business and Work* (eds. Johnsen H.C.G., Holtskog H. and Ennals R.; Routledge 2018) set out challenges for social science.

In this Editorial, we consider what can be learned from the papers published in this issue, EJWI 4.1.

A common theme of the papers in EJWI 4.1 is how social science can cope with the future. This has not been explicitly discussed with the various contributors, who have responded individually to the invitation to publish in EJWI 4.1, but I suggest that it can be seen in their work which is published here. They have shown commitment, engagement and urgency, and they have used a variety of research approaches, assembling the necessary tools in their language toolboxes, in the process crossing many conventional borders. This exemplifies the pluralist philosophy of EJWI which was set out in issue 1.1 2015. The contributors have not remained detached observers, but have themselves engaged in Workplace Innovation.

The scene is set with the intellectual obituary of Björn Gustavsen, in which I focus on "democratic dialogue and development". The profile on which the obituary is based was approved by Björn Gustavsen, who died in September 2018 after a long illness. Over several decades, his vision was expressed in practice in Norway, Sweden and the European Union. Gustavsen provided a core vocabulary to enable practitioners and researchers to cope, including “democratic dialogue”, "development organisations" and "development coalitions", which amplified his account of work organisation, and he showed us how to learn from cases. The paper quotes from many of his publications. He was a master of succession planning: the contributors to this issue are among his successors.

The second article comes from Halvor Holtskog and Geir Ringen, of the Norwegian University of Science and Technology, in Gjovik. They present a case study of changing organisational mechanisms in a large multinational manufacturing company, operating in Norway. The article is based on four research projects over a period of eighteen years. They introduce Lean, and debates on Quality Systems in manufacturing industry.

The third article comes from Rosemary Exton and Peter Totterdill, of Workplace Innovation Europe, who have been coping remarkably with a turbulent and uncertain future in the UK, which is currently made more complicated and unpredictable by Brexit. Totterdill has acknowledged the extent to which his work was influenced by Björn Gustavsen, to whom he dedicated a co-edited book in 2004 (*Action Research in Workplace Innovation and Regional Development*; eds. Fricke W. and Tottterdill P.; Amsterdam, Benjamin). Exton and Totterdill are coping by relocating their company Workplace Innovation Europe in Ireland, and unleashing a new programme of Workplace Innovation in Scotland. Working in collaboration with TNO, they are driving the European Workplace Innovation Network (EUWIN) ahead in 30 countries, learning from experience of workplace practice.

The fourth article comes from Sanna Wenström, Satu Uusiautti and Kaarina Määttä, at the University of Lapland in Finland, where their focus is on teacher enthusiasm and Vocational Teacher Education. In a manner that is reminiscent of Totterdill's "Fifth Element Diagnostic" (see earlier issues of EJWI), they use their PRIDE model in order to clarify key issues around teacher motivation. This paper is about motivation and innovation in the knowledge workplace, and difficulties in defining the essence of enthusiasm, which they see as crucial for the future sustainability of industry. Enthusiasm involves breaking through conventional barriers of disciplines and sectors, at the expense of losing some quantitative dimensions.

The fifth article comes from Niels Fredrik Garmann-Johnsen, Migle Helrmersen and Tom Roar Eikebrokk at the University of Agder in Norway, where the authors are attempting to apply Nordic concepts of participation and co-

creation to eHealth, in the context of the state of the art in IT. Working firmly within the tradition of the Nordic Model of Working Life Research, the authors have conducted a major literature search, spanning many traditionally separate discourses, complemented by semi-structured interviews. Their discussion of the workplace extends to ergonomics and co-operative design. As with the team at the University of Lapland, they identify a common vocabulary, although it arises in disparate contexts, in which it may have different meanings.

The overall conclusion could be that a new language game is being played, which brings together researchers and practitioners in previously separate sectors and fields. The debate on Workplace Innovation now includes Vocational Teacher Education and eHealth. As we learned from *Work Life 2000: Quality in Work* (Ennals 1999, 2000, 2001), preparing for the Swedish EU Presidency in 2001, this does not mean that there is now one unified scientific language. Rather, it encourages groups of social scientists and practitioners who have developed mutual understanding, to engage in a wider dialogue, listening to new and unfamiliar points of view, and learning from differences.

Finally, we consider a future agenda for EJWI. Our issues to date can be regarded as a Feasibility Study.

We now invite the submission of papers for publication in general issues, for which there are no prescribed deadlines. EJWI welcomes papers on diverse topics, with the objective of developing a new generation of contributors, stimulating new debates. We operate a system of peer review.

At the time of writing, we are also preparing a set of special issues, on:

- Socio-Technical Systems Thinking in Manufacturing
- Skill and Technology
- Sustainable Work
- Innovation, and in particular Workplace Innovation, in Portugal

We welcome proposals for further special issues.

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Johnsen H.C.G., Holtskog H. and Ennals R. (eds.) (2018), *Coping with the Future: Rethinking Assumptions for Society, Business and Work.* London; Routledge 2018)

EUROPEAN JOURNAL OF WORKPLACE INNOVATION

Reflecting on the *Coping with the future* conference

Hans Christian Garmann Johnsen

The intention of the conference was to address the challenges for business and work, in the perspective of a potential systemic shift towards digitalisation and sustainability. The conference did not conclude whether we are entering a new stage in industrial development, or simply enforcing trends that are already on the way. Still, I think that the event was successful, and met the expectations that we had, in addition to giving new thoughts and ideas. It should be a good platform for further co-operation.

Some key figures: more than 100 persons attended the conference; a core group attended all three days. Some nine key notes were delivered, and some twenty papers were discussed in six session. There were several discussion sessions and two panel discussions. Researchers from several European countries as well as from the USA and South America, contributed to an international dialogue. Special issues of the three journals represented at the conference will be published.

Even though the conference did not reach conclusions or point at specifically tracks forward for the development of business and work, it did something that is not often seen in academic conferences: it brought together both practitioners and cases from practice in the form of business and policy, and from research. It also linked the theory / practice division to methodological and philosophical considerations. In the future this spectrum of considerations should be part of the debate in work life research. Also, the diversity of presentations and topics addressed in the papers and key notes could be a model for future events of this kind.

Partly included in the conference was a very interesting PhD defence by Carla Assuad, where the topic was the concept of rationality in relation to sustainability. It paralleled the discussion by Olav Eikeland and others in the Acton Research discussion on forms of knowledge. Work life research is under pressure to provide reliable and valid knowledge, and qualitative research in general is under pressure in the current academic and social/political climate. This calls for qualitative work life research that is based on a solid methodological foundation, and thereby an approach to Action Research that addresses some of its inherent epistemological challenges.

These three aspects of research: the dialogue between research and practice, the diversity of methodological and theoretical approaches, and the continuous awareness of the epistemological and philosophical underpinnings in the research process, are important dimensions to take forward in the further development both of AR and Workplace Innovation.

In addition, one could argue that the presentation by Emil Sobottka reminds us of the fact that research, including business research, happens within a social and political setting, with ideological dimensions that we should have a conscious relation to, not least in the perspective of sustainability. Even though these are not as much in conflict in European business development as in other parts of the world, there is conflict there, and this should be a concern for us. The key notes of Einar Duengen Bøhn and John Hurley, as well as the opening welcome address by the UoA rector Frank Reichert, emphasised the future, and a systemic dimension of the issues we discussed.

Thus, “Coping with the Future” makes it important to see the system dimensions of the context in which we are working, and address the comprehensiveness of the issues we discuss. These should be things which we bring with us in our future discussion of co-operation on how to bring work life and workplace research forward.

I should like to thank all participants for their interesting and engaged contribution, and the organising committee for good and constructive collaboration.

About the author

Hans Christian Garmann Johnsen, Professor at University of Agder, is Managing editor EJWI and Clair of "Coping with the Future" Conference 2018.

EUROPEAN JOURNAL OF WORKPLACE INNOVATION

Democratic Dialogue and Development: An Intellectual Obituary of Björn Gustavsen

Richard Ennals

Foreword

Björn Gustavsen commented on my profile of his work as a Great Organisational Change Thinker, for the Palgrave International Handbook of Great Organisational Change Thinkers (2017). He was already seriously ill with lung cancer. He was concerned with succession planning, so that his work could continue after his own death. This intellectual obituary is adapted from the profile.

Abstract

Björn Gustavsen, with an original professional background as a lawyer and judge in his native Norway, had a formative role in organisational development processes in Norway, Sweden, Scandinavia and the European Union over four decades. Following in the tradition of Norwegian working life research by Trist and Thorsrud, he provided the conceptual framework and practical case studies which have driven major national and international programmes. He learned from different experience of organisational change in, for example, the USA and Japan, but he identified a distinctive way forward for the European Union, where he acted as a senior adviser. In contrast to conventional Taylorist top-down management and reliance on expert consultants, his approach was bottom up and concept driven, with a focus on empowering workers. With a commitment to long-term sustainable processes, he emphasised the importance of capacity building and succession planning, highlighting development organisations. His approach to partnership and coalition building enabled collaboration across sectors, in the cause of creating collaborative advantage. He had a distinctive fluent academic writing style, but spent most of his time engaged in the design and practice of development, and editing the work of younger colleagues. He saw the role of academic journals and edited books in the development process, so encouraged new publications, but without seeking to dominate. He took ideas of Action Research and case studies, and applied them to national enterprise development programmes, working with the labour market parties. This resulted in a distinctive research and development culture.

Keywords: Action Research, democratic dialogue, development coalition, development organisation, labour market parties,

Introduction

Björn Gustavsen was a longstanding prominent contributor to international research literature, writing frequently at the policy level in Norway, Scandinavia, and Europe. His writing had a consistent purpose and was targeted to particular audiences. The focus of his work and writing was not academic theory, but engagement in practice in working life.

For Björn Gustavsen, thought and action were closely linked: publications are actions, and research can have a political dimension. Because this approach diverges from North American orthodoxy, he is not easily compartmentalised in conventional academic terms. Accordingly, he may be unfamiliar to many readers. Drawing on Gustavsen's writing and practical interventions, we present his consistent approach to organisational change, illustrated with accessible quotations from his publications. His core themes are democracy, dialogue, and development. We highlight in particular the themes of development organizations and development coalitions.

Influences and Motivations

Björn Gustavsen began his career as a lawyer in his home country, Norway. At the time, Norway was seeking to find a sustainable way forward after the Second World War. Gustavsen's thought maintained a consistent political direction. He saw democracy as relevant to the workplace and to the political process. This perspective stemmed from his cultural context: Norway held a preference for consensus, rather than conflict. Accordingly, there was a tradition of national agreements involving government and the labour market parties: employers and trade unions. That tradition has continued but has weakened in recent years. After decades of consensus, the extent of engagement by the labour market parties declined.

Protection and Participation

Gustavsen saw his work on drafting the Norwegian 1977 Work Environment Act as an important action research intervention (Gustavsen & Hunnius, 1981). Socio-technical ideas from the Tavistock Institute were put into practice through an intervention in the legislative process. To what extent could legislation bring about sustainable change? Could the rules within which decisions were made be changed? What would be the impact on citizens? These issues were important for a trained lawyer. In pursuing them, he helped to frame the legal dimensions of Norwegian life. He introduced the use of democratic dialogue to solve environmental and safety problems and other challenges in the workplace. This represented a transformation in approach, from worker protection to active participation for change. He saw the need to look at work environmental issues as a whole, combining technical and organisational factors. Even now, this notion still needs to be more widely understood by the labour market parties and the Norwegian tripartite system of government, employers and trade unions.

The View from Scandinavia

Organisations are culturally situated. The world can look different from Scandinavia. It is unlike North America. Indeed, "comparing Scandinavian societies to liberal capitalist ones, such as the UK and the US, may be like comparing a football and a pyramid" (Gustavsen in Ekman et al., 2011, p. 8).

The differences are certainly profound. Some of these differences have been captured in discussions of the Scandinavian Model of Business and Society, in which Gustavsen participated (e.g. Ekman et al 2011) where there is a focus on respect for work, social equity, a tripartite approach to the workplace, linking government, employers and trade unions, and consensus. This, in turn, has given rise to discussion about varieties of capitalism, in which Scandinavia has developed differently from the Liberal Capitalist economies of the USA and UK, and differently from the European Union as a whole. In this context, Gustavsen's account of development coalitions provided a language in which differences can be explored.

Although the United States and Japan have dominated management literature, Gustavsen's focus has been Norway. He has built on Norwegian experience to address international contexts, particularly in Europe. He also saw the Japanese approach to quality, with an emphasis on empowerment of workers through approaches such as Quality Circles, as providing a focus for workplace dialogue. Building on the work of the quality movement, he did not emphasise compliance and control, but instead saw it in terms of dialogue and empowerment.

> Quality has been misconstrued as a means of providing quantitatively testable measures, frequently imposed externally. It is rather a matter of language, whereby those who share concerns regarding quality find that they are engaged in ongoing communication, based on common understandings. (Ennals & Gustavsen, 1999, p. 82)

Gustavsen's influence extended far beyond his native Norway. He contributed to debates under many headings, crossing borders of countries, disciplines, and economic sectors. His positions and practical contributions were consistent and distinctive.

Understanding Gustavsen

Gustavsen drove theory from practice (Toulmin & Gustavsen, 1996). He rejected a reliance on "expert-led change," which gives power to consultants and tends to be imposed top-down. Rather, he favoured "concept-driven" processes of change (Gustavsen et al., 1996): bottom-up, based on democratic principles. This theoretical objective was made practical through live cases with an emphasis on active participation. He did not offer single, dogmatic solutions or one best way. His work was intended to help people learn from differences, because differences represent a vital resource. He argued that we are best able to learn from the experiences of others when we ourselves are engaged in processes of change.

Gustavsen's Norwegian background is vital for understanding his work. Born in April 1938, he received a law degree from the University of Oslo in 1964. He was an assistant judge in the years 1965 to 1966. He joined the Norwegian Work Research Institute (AFI) in 1970, becoming its director from 1972 to 1983. He was then Professor at the Swedish National Institute for Working Life (NIWL) from 1986 to 1999. His focus throughout was on working life. He was not an ivory tower academic or a commercial consultant. Even prior to Gustavsen's affiliation with them, both AFI and NIWL (until its closure in 2007) hosted strong traditions of Scandinavian research on working life. AFI is now largely funded from contract work with industry sponsors. NIWL researchers were dispersed to universities and research institutes across Sweden.

Subsequent generations of researchers have not always understood Gustavsen's work and methods, especially researchers relying solely on academic literature. For example, they have sometimes suggested that Gustavsen disregarded issues of power. To the contrary, his tacit knowledge of such issues informed his actions, rather than being spelled out in text. He brokered deals with those in power; namely, the Norwegian government, employers, and trade unions.

Gustavsen must be understood in context. He was the architect of a series of major, government-supported development programmes in Scandinavia, whereas other international scholars have preferred to work only in academia or as consultants in the private sector. Unlike a generation of innovative pioneers who made generalisations based on reducing their differences, Gustavsen instead saw differences as a valuable resource for collaborative learning.

In contrast with many American management gurus, Gustavsen did not offer ready-made solutions based on celebrated cases. He opposed Taylorism, top down management practice, and, like Japanese quality experts, preferred to focus on empowering the workforce. This meant emphasising participation, engagement, and in particular, dialogue. Gustavsen stated, "Dialogue refers to conversations, or discussions, between equal partners,

characterised by openness, willingness to listen to each other, to accept good arguments and generally to learn from each other" (Ennals & Gustavsen, 1999, p. 81).

Gustavsen did not, however, offer neat and definite conclusions after the process of dialogue. If a process of dialogue is to be sustainable, he would argue, it cannot be brought to an end with final agreements. There must be room for additional participants, if development is to continue. This principle is fundamental for organisations. Thus, it may be a mistake to seek single answers. Democratic dialogue was a priority for Gustavsen, throughout his work.

Like the philosopher Wittgenstein, whose work he uses (Wittgenstein, 1954; Ennals, 2016), Gustavsen tended to set his own agenda rather than be driven by the academic literature. He did not start by thinking in terms of individual firms in a capitalist economic system. He chose different units of analysis, at the meso level, between individual firms and regions. Language and dialogue were important as participants are engaged. His perspective was bottom-up and strategic.

Rather than relying simply on developments in the United States, he tried to learn from changes in locations such as Japan and the European Union, and to apply them in particular to Scandinavia. His focus is on development, rather than management. He had deep personal roots in Norway, but he was able to maintain professional careers in both Sweden and Norway. This provided opportunities for comparisons and benchmarking.

Action Research and Organisational Change

Gustavsen's practical engagement provided the basis for his theoretical contributions. He was a major figure in the action research academic literature (Gustavsen, 2001, 2003, 2004, 2007; Gustavsen et al., 2008), but he pursued his own pragmatic line of argument while based at AFI. Although action research has often centered on individuals, Gustavsen was primarily concerned with organisational change. He developed contexts for regional development and national enterprise development, and incorporated action research into major programmes. Action researchers became instruments of policy, and actors in the processes of organisational change (Gustavsen et al., 2001; Levin, 2002).

Gustavsen long worked closely with Norway's labour market partners: trade unions and employers. Behind the scenes he maintained engagement in the collaborative culture and designed a succession of major programmes. He was also active in European projects, seeking to develop ongoing European networks. He held senior professorial posts at the University of Oslo (1985–1999), the Norwegian University of Science and Technology in Trondheim (from 2000), and the University of Vestfold.

From that set of academic bases, Gustavsen led work on enterprise development and regional development. For Gustavsen, evaluation is a key part of any development programme, which is a process that requires engagement. He states, "Evaluations emerge as active, constructive processes in which those who perform the evaluation put a lot of their own ideas into the process" (Gustavsen in Toulmin & Gustavsen, 1996, p. 26). He designed, led, and evaluated a series of programmes in Sweden, including Leadership Co-ordination and Co-operation (LOM) and The Working Life Fund (ALF) (Gustavsen et al., 2006), and Norway, including Enterprise Development 2000 (Gustavsen et al., 2001) and Value Creation 2010 (Johnsen & Ennals, 2012). Each involved government, employers and trade unions,

Development

Organisational development requires effective collaboration. Gustavsen argued that individuals can achieve relatively little by working alone. We find partners with whom we can engage productively and develop a sustained relationship. We build a network of contacts on which to draw in particular circumstances. We create collaborative

advantage. When a new challenge arises, we build a coalition of the willing from our partners and network contacts with different backgrounds, and we seek to bring about change. We refer to this as a development coalition. It may cross previous borders, facilitating change and offering a context in which action research can bring results.

Development can take place in many contexts. It involves a move from the known to the unknown. People work together, creating social capital, when they trust their co-workers and feel a common sense of direction or shared value. They engage in "pre-competitive collaboration", creating collaborative advantage (Johnsen & Ennals, 2012).

Development Coalitions

Gustavsen's concept of development coalitions (Ennals & Gustavsen, 1999; Ennals, 2014) was applied at local, regional, national, and European levels. It provided a unifying theme for his work on organisational change.

A development coalition is a structure in which different partners come together to pursue a shared objective or create collaborative advantage. Regional and national development programmes, particularly in Norway, have at times recommended the creation of development coalitions, bringing together large and small enterprises, public sector organisations, and universities or research organisations. Sometimes a new legal entity has been created, with implications both for business and for democratic accountability.

Action research is encountered at the level of individual actors, such as reflective professionals, in accordance with the Action Research Journal tradition, and through the International Journal of Action Research tradition of organisational change and renewal. These traditions are different, with diverse philosophical reference points, and few common references, but Gustavsen wanted to demonstrate that they can be complementary. The integrative but often temporary role of a development coalition can be a link, because it facilitates collaboration. It can even be seen as a form of action research in itself, creating a structure that enables new possibilities.

Development coalitions are not a distinct and separate category of organisation; they do not provide consistent contexts for individual action research or for analysis by economic geographers. In some cases, where Gustavsen was influential in programme design and management, researchers were employed to follow the policy of the programme, but in other cases action research was used to develop and implement strategy.

There have been historic cases of collaborative activity that we might now consider as action research, for example the creation of NGOs (non-governmental organisations formed as development coalitions) to abolish the transatlantic slave trade. We can build on past experience, and provide foundations for others to use. This tradition has continued in Latin America in emancipatory action research. So, the similarities between work in action research in Brazil and Norway can now be recognised.

Dialogue and Development

Discussion of development coalitions arises from a context of dialogue, particularly in Scandinavia, where dialogue seminars and dialogue conferences play prominent roles. Within dialogue, individuals can reflect on their own professional experience. They do not necessarily reach agreement, but they are able to move on in their understanding, often working with new groups of people.

Gustavsen articulated principles of "democratic dialogue" which are widely shared, especially in Scandinavia:

1. The dialogue is a process of exchange: ideas and arguments move to and fro between the participants.

2. It must be possible for all concerned to participate.

3. This possibility for participation is, however, not enough. Everybody should also be active. Consequently each participant has an obligation not only to put forward his or her own ideas, but also to help others to contribute their ideas.

4. All participants are equal.

5. Work experience is the basis for participation. This is the only type of experience which, by definition, all participants have.

6. At least some of the experience which each participant has when entering the dialogue must be considered legitimate.

7. It must be possible for everybody to develop an understanding of the issues at stake.

8. All arguments which pertain to the issues under discussion are legitimate. No argument should be rejected on the ground that it emerges from an illegitimate source.

9. The points, arguments etc. which are to enter the dialogue must be made by a participating actor. Nobody can participate "on paper" alone.

10. Each participant must accept that other participants can have better arguments.

11. The work role, authority etc. of all the participants can be made subject to discussion: no participant is exempt in this respect.

12. The participants should be able to tolerate an increasing degree of difference of opinion.

13. The dialogue must continually produce agreements which can provide platforms for practical action. (Gustavsen, 1992, pp. 3–4)

When we consider enterprise and regional levels, work organisation can be regarded as a missing link both within and between organisations. In concept-driven development, the lead comes from workforce participation. A pivotal role is played by the development organisation, which is a temporary and transitional structure, allowing participants to explore new ways of thinking and working. The participants may alternate between work organisation and development organisation, taking ideas and experience with them. The European Union can be regarded as an arena in which development organisations are facilitated, both at the national level and through networks supported by framework programmes.

Regional Development Coalitions

In Norway, with its enthusiasm for regional policies, there is a continuing focus on regional development coalitions, which have been a central component of nationally funded programmes of enterprise development (Gustavsen et al., 1997; Gustavsen et al., 2001; Levin, 2002). Regional development coalitions provide a means of advancing shared aspirations. They have sometimes been misunderstood as precise descriptions of particular organisational forms, rather than as the outcomes of collective efforts. After an informal start, Norwegian regional development coalitions have sometimes become government-funded policy instruments. Researchers were not autonomous, but rather were employees in such programmes. As a result, there was debate on the democratic credentials of a structure that represented a set of interest groups, and could not claim to be detached.

Even in Norway, no two regions are the same in their economic activities, leading institutions, or distinctive cultural histories. New patterns of collaboration were required. Discussion of the issue occurred at a level of analysis above the single enterprise and below the national government. Geographical regions are located at this intermediate (meso) level.

In Europe, regions vary in size, having in common only the fact that they are regions. They host distinctive patterns of innovation. Gustavsen's networking projects compared experience in many countries: Sweden, Norway, Finland, France, Germany, Italy, Ireland, and the United Kingdom (Ennals & Gustavsen, 1999). Gustavsen suggested the concept of regions of meaning (Gustavsen, 2004), thus escaping the constraints of geography.

Gustavsen led international collaborative research that brought education and training together in coalitions with regional development. His approach was to use European regional learning cases from participating countries such as Germany, Norway, Portugal, Greece, Sweden, the United Kingdom, and Lithuania (Gustavsen et al., 2007). He anticipated that lessons could then be learned from the differences among them. Over a series of workshops, researchers described cases in which they were personally involved against the background of other cases. This procedure linked discourses on vocational education and training with regional development.

The Dialogue Conference

Gustavsen's influence can be seen in the continued impact of the Norwegian Model, which includes an emphasis on democracy, social partnership, social equity, and consensus. He designed and managed national programmes of enterprise development, made possible by Norway's government income from oil and gas. He developed a research methodology for projects with working life, making extensive use of dialogue conferences (Gustavsen & Engelstad, 1986). This method of using dialogue conferences has been widely adopted by his followers.

> Throughout the 1980s, by far the most important measure within the framework of the Norwegian agreement was a kind of conference, initially called a Mapping Conference, later a Dialogue Conference, With participation from all levels of the formal organisation, the purpose of the conference was to create local discussions around issues like work organisation, in the light of the challenges facing each enterprise. The point was the conversation as such. (Gustavsen in Johnsen & Ennals, 2012, p. 30)

Influence

Gustavsen was influenced by the work of the Tavistock Institute in Great Britain on socio-technical systems and organisational change, where he worked. In turn, his work has influenced Great Britain's Work Organisation Network and network partners across the European Union. He has shown himself capable of understanding issues in Great Britain thanks to the common ancestry of the research. Gustavsen has operated in many contexts and often at several levels at once, some of them behind the scenes. At times he was like Alfred Hitchcock, a writer and director who also plays a modest role on stage.

Gustavsen did not generally base himself in academia, but rather at AFI, with active engagement in projects and advisory roles within government. He did not favor grandstanding and Powerpoint presentations, but preferred active, engaged dialogue. His contributions appeared spontaneous, rather than prepackaged, as he used the language of his interlocutors. He joined debates and followed the rules of their language games. He operated inside the debate, rather than as a detached observer, and he sought to encourage concept-driven development, rather than expert-led development. This meant using the language of the dialogue as a starting point.

> A concept driven process is not only a process which is organised around a specific idea: it also implies that the idea has been developed through broad dialogues within the organisation, where

> the concept emerges as an expression of contributions from a broad range of organisational members. (Ennals & Gustavsen, 1999, 41)

Gustavsen was interested in ideas of a "third way", between capitalism and socialism, but in practice rather than just rhetoric. This approach enabled him to explore development coalitions in both public and private sectors. Even when his projects took place in private-sector, capitalist contexts, Gustavsen's focus continued to be on partnership, dialogue, collaboration, and collaborative advantage. He looked at work organisation, both within and between organisations.

Diffusion

It is all very well to develop individual successful cases. Yet how can case studies be applied to specific situations to bring about change? The answer is not obvious. Gustavsen askedswhether "it [is] reasonable to believe that experimental changes, star cases, or other examples of 'outstanding systems' could really be diffused or disseminated to other workplaces" (Gustavsen in Toulmin & Gustavsen, 1996, p. 18). The way change occurs, according to Gustavsen, is by being diffused through interactions between organizations. As formulated by Gustavsen (Gustavsen in Toulmin & Gustavsen, 1996, p. 20):

- Changes are broadly defined efforts which seek to cover all major issues, organisational levels and interest groups within the enterprise
- Many enterprises are involved.
- In a pattern which encourages co-operation between the participants
- Based on a pattern of mutual contributions rather than leader-follower.
- Researchers and other professional resources play a role which is complementary rather than leading.
- The efforts are not steered by one single theory of good organisation.
- Theories or views on optimum organisational structures are kept open in the early phases of the process.
- General theory, general views, general assumptions pertain to the process of how to create local understanding and change.
- Continuous interaction between the enterprises themselves is the primary channel of diffusion.

Gustavsen can be seen as Norwegian, Scandinavian, and European. His influence can be seen in each arena. He talks and writes from the experience of practice and suggests an approach to learning from different cases.

> Toulmin in "Cosmopolis" (Toulmin 1990) argues that a discursive comparison of experiences has to be the foundation for whatever can be extracted from each case for use in other cases. In a process of discursive comparison the point is not primarily to decide "who is best" or what "universal truths" can be derived from all the cases taken together, but to use cases in alternating figure-ground relationships which enable each participant to gain a better understanding of his or her practices when seen in the light of what others do, what options they see, and so on. The goal is not to lay

> down universally applicable laws, but to move ahead through a discourse on experience that can enrich all participants. (Gustavsen in Toulmin & Gustavsen, 1996, p. 13)

At the same time, he used theory to frame practice; for example, when developing international seminars of researchers and practitioners with the objective of creating connectedness rather than pursuing predetermined agendas. As he stated: "Innovation is connectedness. Only by being connected is it possible to know what others do and to use this as the raw materials for one's own innovative acts" (Gustavsen in Gustavsen, Finne, & Oscarsson, 2001, p. 245).

Gustavsen presented connectedness in terms of development coalitions, a central concept in his account of organisational change. In one representative passage, he states: "To form learning organisations or development coalitions, we need to learn together. …. This is not so much a question of methods as it is of good will" (Ennals & Gustavsen, 1999, p. 16).

Key Contributions

Gustavsen introduced a consistent language for discussing organisational change and development. This enabled others to follow him. Of course at times his followers were not familiar with the background. The key focus was on work organisation, within and between organisations, building the picture from the bottom up through productive partnerships, alliances, and development coalitions.

> As an expression of the idea of learning organisations, development coalitions are fluid, transitional, continuously reshaping themselves to meet new challenges. Essentially, they are made up of horizontal relationships, constituting channels through which information flows, experiences are compared and new solutions are worked out, through extracting the best out of a broad range of experience and ideas. (Ennals & Gustavsen, 1999, p. 57)

Gustavsen did not see work organisation as a separate and distinct area of study. Instead he argued that work organisation is a reflexive characteristic of organisations undergoing change. We must recognise that we are involved in such organisations.

> It seems that where much research and thinking on work organisation has gone wrong has been in assuming that a phenomenon that is linked to a whole series of other issues and topics, where each and every one exhibits a substantial dynamic, can be made subject to an autonomous formation of theory. Rather, work organisation seems to demand a reflexive thinking. (Ennals & Gustavsen, 1999, p. 53)

Younger generations of researchers have adopted methods like his dialogue conferences, as a result of his focus on building critical mass.

Gustavsen also contributed to theory and practice in action research, thus keeping abreast of debates in the field. For some academics his work was outside the mainstream because he emphasised managed research. He considered regions, nations, and continents, rather than individuals. This raised questions about a limited focus on individuals such as chief executives. For Gustavsen, action research and politics are hard to separate.

> We see the role of the researcher as a partner in development coalitions. In a development coalition, the point is not for all participants to become alike but to pool resources, supplement each other, help each other, provide complementary resources.

> Within such a context, research has a number of contributions to make, based on its specific competences in conceptual development, in interpreting events, in developing methodologies, and even, provided that the necessary care and caution is shown, to create theory. (Gustavsen, 1997, p. 199)

Researchers cannot simply claim objective detachment: they are engaged, part of the subject under study.

Gustavsen created the basis for a family of major programmes for organisational change on national and international levels: Sweden, Norway, Finland, Germany, Great Britain, and the European Union. On the basis of the Swedish LOM and ALF programs, he advanced the development of critical frameworks and a benchmarking methodology. He emphasised that we can learn from our experience of change by describing it against a background of other cases. He introduced assumptions about dialogue and collaboration, rather than simply competition.

As a professor at NIWL, Gustavsen advised Allan Larsson, then Director-General of DG Employment and Social Affairs in the European Commission, on the 1997 Green Paper, "Partnership for a New Organisation of Work," which expressed many of Gustavsen's ideas. This initiative was less successful than at first appeared, when it provided a focus for international networks. Larsson had been a Swedish minister, and the Green Paper recommended that the EU should follow a Swedish lead, shortly after Sweden had joined the EU. Others in DG Employment and Social Affairs, for example from France, took a different view. Gustavsen had a vision of development coalitions, a European network, and a network of networks, with Europe constituting a development coalition. He stated: "It is when we approach the idea of comparisons in settings made up of a large number of actors and enterprises that the idea of 'Europe' as a development coalition starts to gain credibility (Ennals & Gustavsen, 1999, p. 9).

Gustavsen led two collaborative projects that focused on Europe as a development coalition: Both followed his approach of dialogue and learning from differences. From his standpoint, "the European Union is itself a development coalition structure which has the objective of supporting development, both at a continental level, and in the terms required by the individual member states, themselves increasingly operating as development coalitions" (Ennals & Gustavsen, 1999, p. 75). However, other policy perspectives prevailed. As a result, Larsson resigned from the European Commission.

Gustavsen chose different units of analysis, rather than the single firm. In particular he wrote about the meso level, existing between the levels of the firm and the region, which could be highlighted by dialogue conferences. He developed an account of work organisation dealing with relations between organisations. He introduced productive partnerships, development organisations, development coalitions, and regional development coalitions. He envisioned "a movement towards network co-operation between enterprises, even a movement towards whole regions becoming 'units of change'" (Ennals & Gustavsen, 1999, p. 29).

Gustavsen built academic relationships with American organisational-change theorists, while working in a Scandinavian context. His American audiences did not always understand the context in which he worked; for example, the roles of labour market parties. He enabled the formation of new journals (CAT, IJAR) without seeking to dominate them.

He did not seek a high personal profile or sold consultancy services, preferring to orchestrate and to facilitate participation. He could be seen as a modern Machiavelli, working behind the scenes, while being sensitive to the needs of the major actors. He tailored his advice to the needs of actors, enabling them to take ownership. He empowered others to develop and to present challenges. His personal interventions were practical, making the complex seem simple. He drew on experience and tacit knowledge, which of course could not be fully documented. His actions expressed what needed to be said.

New Insights

I first met Björn Gustavsen in 1988, after my own experience of managing national research programmes in Advanced IT in Great Britain and the European Union. His ideas resonated, and they contrasted with conventional research management. He referred to a different philosophical framework from the techno-centric positivism which then dominated Great Britain. For Gustavsen, collaborative research, even when the apparent focus was on new technology, was primarily about work organisation as a reflexive dimension of the organisation, the use of language, and the need for developing dialogue.

Gustavsen gave practical reality to philosophical theory in a way I had not previously encountered in Great Britain. He made confident use of philosophers and developed new ways of working. He and Bo Göranzon (Göranzon, 1988–1995; 2006) at NIWL were both influenced by Wittgenstein (Wittgenstein, 1954; Ennals, 2016) and worked with Stephen Toulmin (Toulmin, 1990, 2001), John Shotter (Shotter, 2006), and Oyvind Pålshaugen (Pålshaugen, 2006).

Gustavsen developed what has been called the communicative turn, developing dialogue in organisations and taking up ideas from Jurgen Habermas (Habermas, 1984). Live action research case studies provided a starting point for comparisons and further cases. He used discussion of case studies as "an apparatus for linking research to actors in working life, in such a way that research can contribute to practical development" (Gustavsen, 2007, p. 97).

Having taken a distinctive approach to action research, Gustavsen set it in a wider context:

> The difference between action research and other forms of research is not that somewhere along the line of arguments values emerge, but that action research explicitly faces the challenges associated with a commitment to values, rather than keep on under the pretence that the challenges do not exist. (Gustavsen, 2007, p. 103)

The philosopher Wittgenstein spent much time in Norway. In consultation with Toulmin and Shotter, Gustavsen developed Wittgenstein's work on family resemblances, language games, and forms of life. Typically practice went ahead of theoretical argument.

> It is this element of "family resemblance" between organisations that, in combination with the ability to conduct dialogues across as many boundaries as possible, constitutes the collaborative advantage of the Scandinavian societies. Numerous different alliances are possible, and the potential for innovation systems correspondingly large.
> (Gustavsen in Johnsen & Ennals, 2012, p. 37)

Gustavsen always took an interest in power. He advised governments and the European Commission. Perhaps more radically, he saw research and power as closely associated. In his national programmes, political and research agendas were often fused into a version of action research. This was not necessarily recognised as part of mainstream action research.

Legacies and Unfinished Business

If we apply Gustavsen's lessons to our own work, several broad points emerge. There is no one best way. We need to secure the active participation of everyone in an organisation if it is to develop; it is a matter of democracy in the workplace and in society. We need to be able to learn from differences. We must expect our successors to see things differently. Organisations will continue to change.

Gustavsen linked work organization and policy debate, research and politics. Gustavsen's work continues, with an associated literature. He always gave priority to publication and dissemination. He worked on the borders between policy and research, with a focus on practical development.

> All concepts applied in social research have two sources of meaning: other words and practical experience. Making knowledge more actionable implies increasing the emphasis on the practical. …. The shift demands a process consisting of several steps, ranging from establishing dialogic relationships with other people to the development of "regions of meaning", where theory and practice can interact in new ways. (Gustavsen, 2004, p. 147)

Could the next generation match his breadth and depth? Alternatively, would they bring fresh ideas and inspiration? He helped establish the doctoral program in Enterprise Development and Working Life (EDWOR), based at NTNU in Trondheim, which brought together researchers from projects around Norway to build a national research culture based on action research. The successful graduates are now leading research institutes.

Gustavsen set out the core ideas for a strong European tradition in work organisation. He helped to develop a common language and conceptual approach for participants coming from diverse backgrounds across Europe. He influenced those who work in the AFI tradition, such as Oyvind Pålshaugen, Olav Eikeland, Morten Levin, and Hans Christian Garmann Johnsen. He continued to maintain links with Swedish colleagues such as Goran Brulin after the closure of NIWL.

Because of his work, the EU Green Paper, "Partnership for a New Organisation of Work" (1997), was Swedish or Scandinavian in tone and assumptions. There has been a continual, active network at national and international levels, such as Peter Totterdill at the U.K. Work Organisation Network (UKWON) and Steven Dhondt, Frank Pot, and Peter Totterdill of the European Workplace Innovation Network (EUWIN).

Perhaps Gustavsen's most lasting legacy is in Norway, where he spent the last years of his career. Gustavsen's ideas, some tested in Sweden, underpinned a remarkable series of Norwegian national programmes: Enterprise Development 2000, Value Creation 2010, and the VRI programme of regional initiatives. It is unusual to have consistent national programmes over so many years. Diversity in local and regional programmes continued: there is no single common pattern.

Recent academic researchers have discussed issues of power. Gustavsen entered into partnerships with power because he saw dialogue with the labour market parties as underpinning projects on enterprise development. Gustavsen developed the theory and practice of regional development coalitions, which were seen as ways of building collaboration and taking forward change processes. In an era when there was obsession with creating competitive advantage, he laid the foundations for work on creating collaborative advantage.

There has been considerable debate about how lessons can be derived from cases. Gustavsen opposed a mechanistic approach to project evaluation. By designing and implementing large-scale programmes, he brought cases into contact with each other. He pioneered Nordic benchmarking and what he called the figure-ground approach of describing one case against the background of another. Going one step farther, and drawing on action research, he showed what can be learned from a single case.

> When something new enters a map of knowledge, it will not be much noted if the new element is exactly like one or more of those that were already there. It is only when it stands out that it is able to attract attention and trigger new thinking. The notion of learning from differences opens up, for example, forms of collaboration that cut across technologies, branches and the distinction between the public and the private.
> (Gustavsen in Johnsen & Ennals, 2012, p. 34)

Succession Planning

Björn Gustavsen continued to be active until the end of his life. He was not simply a detached academic observer. We can identify his concern for the future through his active succession planning, in which he tried to ensure that there are strong candidates for key posts, taking the work forward. This applies to Norway and Sweden. Gustavsen continued to influence other research leaders in fields such as Action Research (Greenwood & Levin, 1997; Levin, 2002; Reason & Bradbury, 2001, 2008), and economic geography (Asheim in Gustavsen et al., 2007; and Cooke in Gustavsen et al., 2007)). He was eager to develop mechanisms for dissemination and diffusion, such as the EDWOR doctoral program, and new academic journals (Concepts and Transformation, International Journal of Action Research, and the European Journal of Workplace Innovation).

Gustavsen developed an agenda of continuing programme themes, which can drive new projects. As he emphasised, it is the conversation and the process of dialogue that are most important. We cannot expect to agree on final conclusions. We hope to continue to learn. Gustavsen tackled some big issues, which we continue to explore: regional development, productivity, innovation. He challenged over easy assumptions and emphasised the importance of the workplace in innovation. He laid the foundations for ongoing development. He focused on empowering practitioners, trade unionists, and employers, and on working with labour market parties. He saw beyond individual firms, with experience of programme learning from national programmes (Sweden, Norway, Germany, Finland). He worked with economic geographers, but he went beyond their vision, as he defined regions in terms of dialogue as "regions of meaning". He made a fundamental contribution to the new debate on workplace innovation (Gustavsen 2015).

A New Project

As this profile was being prepared for the Palgrave International Handbook of Great Organisational Change Thinkers, Björn Gustavsen marked his 78th birthday. He was also launching a new project (Hansen, 2016). As Norway was struggling to deal with the collapse in the prices of oil and gas, it had also accepted unprecedented numbers of refugees. It was a matter of concern to Gustavsen that this came when the framework of collaboration between the labour market parties and the wider tripartite dialogue needed to be strengthened. There needed to be new ways of organising co-operation, based on Gustavsen's ideas of development coalitions and creating connectedness. He explored open co-operation, where nobody owns the process, but everyone contributes on his or her own premises to create future patterns of co-operation rather than defining the final result in a tribal language. As so often before, Gustavsen was personally engaged. With his death on 5th September 2018, the work is unfinished. There is work to be done by his successors.

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Further Reading

As seen above, Gustavsen contributed to the development of a rich supporting literature. This final section includes a short list of reference books that enables readers to further their interests.

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Social mechanisms of performance systems

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Abstract

Production systems have continuously evolved since early attempts to standardise parts, processes and work modes to enhance mass production. This was further refined by the Japanese automotive industry, which has been the global benchmark for decades. Lately, such systems have been developed as company specific production systems to create common identities and production principles, to form global production networks and performance systems. The purpose of this article is to investigate the introduction of new systems, or the introduction of new combined systems, casting light on what happens inside the organisation, making these systems work over time. The article illustrates how true change occurred in a multinational company over the period from 2000 to the present. The key point for this study is not the system as a formalised structure for improving overall company efficiency, based on measures regards to flexibility, cost, quality and time. Our concerns relate to mechanisms and agents behind the system itself, and evolution over time. We focus on the two mechanisms, mentor-sponsor and insider-outsiders, understanding how these mechanisms are related and eventually support each other. The article argues that popular managerial and performance tools and systems are less important than how mechanisms for initiating and maintaining focus on performance are managed as a symbiosis between local and central change agents.

Keywords: Production system, mentor-sponsor, insider-outsider, change agents

Introduction

Manufacturing industry has long focused on different manufacturing systems. Some of the most popular systems are Total Quality Management (TQM), and Lean (Bhasin & Burcher 2006; Bralla 1999; Hasenkamp 2009; Ishikawa 1985; Liker & Morgan 2006; Oakland 2003). It is generally understood that these systems have built-in critical tools, which if followed, will bring the organisation to success or gaining competitiveness. This success or competitiveness is delivered by special focus on specific areas of doing business. Total Quality Management, for instance, focuses on how to make quality thinking integrated into every value adding and non-value adding process. Many of these systems are highly celebrated, and documented by many different case studies. This puts the value of the systems as the main explanation for the success uncovered in case companies.

This article takes a closer look at this general understanding. Companies introduce various systems over time, and invest huge resources. Therefore, it is vital to understand the mechanisms for introducing and upgrading performance systems.

The purpose of this article is to investigate the introduction of new systems or new combined systems. We shed light on what happens inside the organisation, making these system work. The researchers have followed one big multinational corporation over 18 years, with close collaboration with the people responsible for working with these systems throughout the years. Mechanisms for maintaining and introduction of systems are at the centre of interest. The research follows a multi-dimensional research methodology, where different information and data gathered throughout the years are compared and analysed.

Theory

Changes of performance systems, like TQM, Lean, etc, are not innovation or initiation, according to March and Simon (March et al. 1994, p. 195). They argue that it is framed inside a well-defined performance programme. Rather, it is an evolution of work place behaviour and work place practice. Complexity is another key component for the success of performance programs (Holberg 2006). Lack of attention to complexity in change or performance programmes harms the company "… the situation gradually deteriorated, to end with everyone heroically sitting and doing 'more of the same' in order to save the situation" (Holberg 2006, p. 134). Whitley (Whitley 2007) looked at complexity in the form of the project-based firm. Skilled workers co-ordinated their work directly, without reliance on management and organisational procedures (Whitley 2007, p. 247). Development of such skilled workers depended on the longevity and co-ordination procedures in the firms involved. Kurt Lewin developed a theory of change, unfreezing, moving, refreezing, as a simple chain (Lewin 1951). This tried to guide organisational change without directing too much attention to complexity; building on the concept of rational management, with planned change in the centre. Several researchers have later disagreed with the concept of rational management, and especially planned change. Christensen (Christensen 1997) summarised it by analysing why brilliant companies sometimes failed. He claimed that failure came because of good management in a complex environment. March (March 1988) regarded narrow rationality with order and control as counterproductive when the goal is innovation, change, and creativity.

This article focuses on long-term organisational changes which accompany the evolution of performance systems. French et al. define organisational development (OD) as "intervention techniques, theories, principles, and values that show how to take charge of planned change efforts and achieve success" (French & Bell 1995). OD has had some interest from the research community, in the sense of how researchers should or could interact with companies and organisations (Levin 2004). However, this article looks at organisational change or development

where the organisational members themselves do the work, asking about the mechanisms involved in making OD happen.

This is also the focal point of Klein's research (Klein 2004), dealing with complexity and the concept of rational management and planned changed. She coins true change as "when ideas or concepts become embedded in the underlying assumptions about how work is done. True change means the new ideas become institutionalised, and are no longer dependent on a change agent or champion to support them" (Klein 2004, p. 1). True change should be understood as change introduced when current knowledge and experience in the organisation cannot solve the challenges. It is similar to push and pull inventory in Lean thinking. You do not produce a product if it is already in the inventory. The signal for starting production is when the product leaves the inventory. The same logic applies for change or true change, only changing when the current system, knowledge, expertise etc. cannot solve the problem.

Another central point is the notion of insider-outsider view. An organisation needs people inside who can think, and relate to it as an outsider would. These people are able to see concepts, and have ideas originated from outside that can benefit the organisation. Bringing in fresh ideas and concepts develops the organisation over time. These pull changes occur through personal networks, using personal contacts before a search through knowledge management systems in the company for that particular expertise. The personal network will grow and increase its importance over time. Klein identified two central roles in network and insider-outsider view, sponsors and mentors (Klein 2004, pp. 155-162). Sponsors are the leaders who find the proper job assignment for the insider-outsiders. Mentors are explained as the network navigators, helping people to find the right contact or expertise. Having sponsors and mentors is not all positive. For instance, it can limit diversity by not thinking like an outsider, monitoring pace, and lack of chemistry or losing organisational influence. Overall, the true change perspective on organisational change is a balancing act between competing forces, like insider / outsider, organisational assumptions / new insights, requirement of an open mind / working from within the organisation. These dilemmas will be discussed further in the article.

Production system

Lean

Over the last couple of decades, *lean production* has become the global blueprint for large scale, repetitive manufacturing. Lean production was popularised by the IMVP study (Krafcik 1988; Womack, Jones, & Roos 1990), which argued that the competitive advantage of Japanese automobile manufactures could be attributed to their superior way of organising supplier relations, product development and operations. Lean production was presented as a systematisation and re-labelling of the Toyota Production System (TPS) in the 1930s and continuously refined thereafter (Holweg 2007; Spear & Bowe, 1999). Shah and Ward (2007, p. 791) defines lean production as "an integrated socio-technical system whose main objective is to eliminate waste by concurrently reducing or minimising supplier, customer, and internal variability". "Waste" refers to excess inventory, excess capacity and activities that incur costs without adding customer value (Ohno 1988). When variability is reduced, production volume, delivery times and quality become more predictable, and production can be levelled out to balance workload and capacity utilisation. Variability reduction is achieved through a set of practices such as standard operating procedures, just in time, total quality management total productive maintenance and human resource management (de Treville & Antonakis 2006; MacDuffie 1995; Shah & Ward 2003). According to popular literature, lean management is about long-term philosophy and developing individuals and the organisation through continuous improvement (Liker 2004; Spear & Bowen 1999). However, it remains to be

explored how these principles are institutionalised in managerial roles, organisational agents, responsibilities and competencies.

System development

Some researchers have tried to define production systems in general terms. Hubka and Eder (Hubka & Eder 1988) attempted to do so by presenting four subsystems; 1) the human system, 2) the technical system, 3) the information system, and 4) the management system, which all affect the transformation process from raw materials to products. A more recent description is provided by Clarke, who claims that production systems represent the changing nature of the form and function of standardisation (Clarke 2005). By standardisation, he does not exclusively mean product standardisation but also standardisation of processes and work. Nevertheless, the history of production systems goes far back in time, and the military is often said to be a forerunner (Cowen 2000).

During the 18th century, machines, jigs, fixtures and gauging systems developed towards part conformity and standardised interchangeable parts. Application of standardisation and production systems went from military arms production to sewing, meat packing and to the early automotive industry (Hounshell 1984). Instead of individual freedom of the artisan to design and produce, production engineers now made detailed drawings and guidelines, hence eroding the need for operators to think about work processes. The next step was to fragment and standardise work tasks according to time and motion studies (Taylor 1911), leading to increased efficiency alongside improved product quality. Complexity was handled by subdividing the problem into minor tasks, easy to perform, which require a minimum of training and learning at the shop floor level. This approach separated thinking, doing, improving and performing, and assumed that workers were primarily driven by monetary incentives (Hackman & Oldham 1976). Mass production represented the first holistic production system, taking into account technology, processes, work standards, as well as social standards regulating payment and working conditions.

The next major step in the evolution of production systems is the Toyota Production System (TPS). The Toyota Motor Company was established in 1930, and this new company struggled through the 1930s by making poor quality vehicles based on primitive technology (Liker & Hoseus 2008). They decided to benchmark their processes against Ford and GM, but the implementation effort was put on hold because of World War II. The work continued in the 1950s (Liker & Meier 2006), where Toyota found that the mass production system was wasteful batch-production, building up huge work-in-process inventory throughout the value chain: pushing products to the next process step (Womack, Jones, & Roos 1990). This rigid and capital-intensive system was seen as inappropriate for serving the dispersed, low volume market in Japan. In addition, the use of highly specialised workers at the American auto-companies, which were easy to replace, was an approach irreconcilable with Japanese work culture. This view emphasises the human beings as the bedrock of all organisations in which solutions to problems are highly situation dependent. An example by Peter Drucker, referred to by Kamata (Kamata 2002), shows that there was a long way to go for the theory of collaboration. In the late 1940s, General Motors introduced what was later called “quality circles” as a partnership between managers and workers to improve products and processes, but the United Auto Workers (UAW) resisted, and argued that even asking workers about their jobs was an unfair labour practice. The TPS therefore proposes a different system of standards, to achieve manufacturing efficiency with a minimum of resources through continuous improvement. The latter is regarded as the major responsibility of the shop floor worker. In the beginning of the 1950s American

management practices, such as quality control, pioneered by Deming (El-Haik & Al-Aomar 2006), were introduced and implemented.

During the early 1960s Toyota (Clarke 2005) introduced the first company-wide total quality system, based on "Quality at the source" and learning by doing principles. Quality is today one of the main principles of the TPS, focusing on in-process quality and stabilisation of processes. The success of Toyota was soon recognised by other Japanese companies, and the spread of TPS to suppliers pushed towards formalisation of the system (Monden 1983): resulting in the first publication by Ohno in 1978. This development- and formalisation process continued throughout the 1980s and 1990s, as Toyota expanded its operations globally. Finally, the MIT study concluded that the performance of TPS was not impacted by culture, history, and social background, stating the new universal lean paradigm (Nomura & Jürgens 1995). From a learning perspective, TPS can be viewed as routinised learning capabilities applied to real life problem solving (Spear & Bowen 1999).

Another production system, known as the Volvo Uddevalla experiment, is based on principles of industrial democracy and teamwork. This system encourages workers to help each other to solve complex problems and smoothing out the workflow in parallel lines (Clarke 2005). Placing human considerations at the centre, Volvo was aiming at increased flexibility, worker motivation and of course sustained efficiency and quality. The system demonstrated some promising features, but the factory closed down in a few years due to large variations in work methods and product quality. Today most manufacturing companies build and develop their production system based on the TPS. It is claimed that Lean is not an option: it is mandatory for manufacturing firms operating in global markets (Liker & Hoseus 2008). Hence, a competitive factor is how companies manage to evolve from a company specific production system to a company-wide production system (Netland & Sanchez 2014).

The latter raises many questions about degrees of freedom, and involvement in implementing such systems at different locations. To build a shared and unified mind-set that allows for superior technological exploitation in a modern and networked organisation is not an easy task. Through the last decade there has been a strong trend among multinational companies to implement company-specific Lean production systems (Netland & Aspelund 2012). Companies like Volvo, Siemens, Hydro and Volkswagen try to co-ordinate continuous improvements across subsidiaries and national borders. The benefits of a centrally co-ordinated approach are cost control, sharing of best practices within the network, developing a common improvement culture, and increased transparency between network companies (Goel & Chen 2008). Coincident with the trend, there are numerous pitfalls: improvement programmes in general have shown no, or at the best temporary, effects (Anand, Ward, Tatikonda, & Schilling 2009), the autonomy of the local plant is potentially harmed (Maritan, Brush, & Karnani 2004), and a centralisation of the company culture can reduce the ability to innovate (Henderson, Alamo, Becker, Lawton, & al. 1998). All too often, it is the tools that are focused, and often it is the only focus.

State-of-the-art research clearly points out that there is a lack of generic and normative models guiding these processes, and how they should be performed successfully (Barnes 2008; Chakravorty 2009; Goel & Chen 2008; IfM 2007; Trikman 2010). Research has shown that improvement projects such as Lean are often elusive and not sustained (Abrahamson & Eisenman 2008; Bateman 2005). An overall question regarding corporate improvement programmes is how tightly or loosely the programme should be managed. On one hand it is evident that optimisation of the network demands vigorous control, but on the other hand it is equally evident that simplification through distribution of responsibility and authority is probably the only practical strategy in global complex enterprises. Trikman (2010) stresses that business process management is indeed a complex task, spanning organisational design, management, information systems and social challenges. In the future, companies

will take a greater and more proactive control over their production networks (Ferdows 2008). There is a call for more nuanced research, with a focal on the various meeting points between local and global actors. A sought-after strategy is to develop and maintain a global company culture that is built upon values which consolidate the "glocal" competitive advantage (Robertson 1995). By this is meant local solutions that also are sustainable at the global level.

Methodology

Multiple Triangulation as a Multidimensional Analysis

Flick pointed out that qualitative research often had multi-methods in focus (Denzin & Lincoln 1994; Flick 1998, p. 229). The metaphor of triangulation comes from military usage and naval navigation where multiple reference points were used to pinpoint, through geometry, the exact position of an object (Smith & Kleine 1986). "*The combination of multiple methodological practices, empirical materials, perspectives, and observers in a single study is best understood, then, as a strategy that adds rigor, breadth, complexity, richness, and depth to any inquiry*" (Flick 1998, p. 231). One common misconception is that triangulation is used in social science to check and validate studies. Achieving consistency across data sources or methods can be useful; however, Patton (Patton 2002) argued that inconsistencies reveal an opportunity to uncover deeper meaning in the data. The same argument can be found in Miles and Huberman's book, *Qualitative Data Analysis* (Miles & Huberman 1994, pp. 266 - 267). Yeasmin and Rahman (2012) offer another support for the argument of uncovering deeper meaning in the data. They also point out that triangulation tends to support interdisciplinary research, where theories from different disciplines helps to deepen and widen our understanding, also arguing for triangulation as something that is natural to humans and is a common way of thinking. Alternatively, "*There may be a correspondence between life as lived, life as experienced, and life as told, but the anthropologist should never assume the correspondence, or fail to make the distinction*" (Bruner & Plattner 1984, p. 7). Not only should anthropologists never assume or fail to make such distinctions, all social scientists should keep this in mind.

Going back to triangulation, (Denzin (1978) identified different types of triangulation, data source, investigator, methodological and theory triangulation. The two latter types are of interest to this article.

The methodological type uses different methods to study phenomena. Here there are two different forms, within-method and across-method. The first, within-method, relates to when a researcher uses one method, and uses different strategies within that method to analyse the data. The latter, across-method, is when the researcher uses and combines different methods to measure the same data. The rationale is that the flaws in one method can be the strength in another. A type of triangulation relates to the usage of different perspectives to interpret a single set of data.

There are three strategies for conducting theory triangulation. One strategy in theory triangulation is to move away from areas characterised by high degrees of theoretical incoherence. Another strategy is to select from contradictory propositions in the field, and to try to make sense for the researcher in relation to his or her background, or what he or she knows about the problem in advance. The third strategy is to develop one's own proposition and theory, called middle-range theory or grounded, substantive sociological theories (Denzin 1978, p. 304). The advantages for theory triangulation are minimising suppression of contradictory propositions (Westie 1965, p. 154); it permits the "*widest possible theoretical use of any set of observations*" (Denzin 1978, p. 306), and it encourages systematic continuity in theory and research.

Some authors have pointed to another type, environmental triangulation, where usage of different locations, settings and other key factors relates to the environment where the investigation took place (Guion, Diehl, & McDonald 2011). Miles and Huberman argued for yet another type, data type (Miles & Huberman 1994, p. 267), which is about the usage of qualitative text, recordings and quantitative data. However, environmental triangulation and data type triangulation are not focused here. The automotive industry is truly a globalised industry, but it does not mean that local environments can have important key factors. Key factors in researching this article are not gathered specifically concerning environment, but some issues will be discussed. Data type triangulation is offered very little space in Miles and Huberman's book. It is difficult to separate this from data source and method triangulation.

It is argued that a combination of the basic triangulation types is ideal (Denzin 1970; Denzin 2009). A combination of triangulation, here called multi-dimensional analysis, will combine different types. Data sources will be triangulated in all three types, space, time, and person. When person data sources are used, the collective and interactive levels are focused.

Validity

Guba and Lincoln frame validity as a matter of both credibility and authenticity (Guba & Lincoln 1989). As defined by Guba and Lincoln, credibility is "*the idea ... of isomorphism between constructed realities of respondents and the reconstructions attributed to them*" (Guba & Lincoln 1989, pp. 236 - 237). The verification of such an isomorphism can be conducted through several techniques (Guba & Lincoln 1989, pp. 237 - 250), and we look at each one, in light of four research projects:

Prolonged engagement: This is a substantial involvement in the field or in the case. The researchers have followed the company for 15 years, starting as PhD students with the case company as one of two primary cases.

Persistent observation: This adds depth to the scope, which prolonged engagement affords. The research has been with access to company documents, presentations, interviews and workshops.

Peer debriefing: The purpose here is to test the findings with someone directly involved in the situation, and to help bring propositionally tacit and implicit information of the evaluator. The two researchers have collaborated closely in each of the projects.

Negative case analysis: This is the analogue to a statistical test for quantitative data. It has not been in focus, but during our investigation of the company, it witnessed the financial crisis with turbulent times (Holtskog, Kaloudis, Carayannis, & Ringen 2018, pp. 23-36).

Progressive subjectivity: This is the process of monitoring the evaluator's own developing constructions, and the degree of privileges to make one's own a priori assumptions dominate. This is a danger when following a company closely over time. Hopefully, having other researchers and companies' participation in the different projects, corrects this tendency.

Member checks: This deals with the testing of hypotheses, data, preliminary categories and interpretation with the members of the community from which the constructions are collected. Formal interviews were transcribed and sent to the respondent for approval, while only some informal interviews were transcribed; most were just written as notes in personal research journals. Still, the meaning and assumptions drawn from these notes were crosschecked with other members in the companies, as no meaning or assumptions are included without being

crosschecked. This crosschecking was also applied to project meetings, focus group meetings and hallway talk, and some were checked with other written materials and recorded data in the management or quality systems. The research team has taken great precautions to avoid factual and interpretive errors.

Transferability (external validity: The company is multinational, with production sites in nearly every part of the world.

Dependability: This is about the stability of the data over time. The company has been very open and collaborated with the researchers well over the years. They have been open about setbacks and failures as well as successes.

Confirmability: This ensures that the data, interpretations and outcomes of inquiries are rooted in the proper contexts, which was already mentioned in the peer debriefing. Writing this article, the documentation gathered through the years were re-read and investigated.

Data Usage

Investigations were first characterised by getting to know the various systems, standards and formal documentation at the case company. Many formal documents were read, and a pattern gradually emerged. Confronting the managers with conflicting data, they opened up the rest of the organisation for interviews and surveys. Most of the formal documents, notes, in-depth interviews and forms were gradually built in a database in NVivo[1]. It served as a repository for coded data used for analysis and reflections. In total, the research spans over four major research projects funded by the Norwegian Research Council. With nearly 100 in-depth interviews, 30 workshops, three surveys, 2 PhD theses and 10 master theses.

Discussions

The case company is a European actor within the metal production segment. This article reports upon a longitudinal study, following this case company and their production system trajectory and development for nearly 18 years. Throughout these years, the company has applied different strategies within the metal value chain. Going back to the year 2000, the case had an integrated value chain from metal production to development, production and supply of advanced safety components for the automotive industry. Attempts to structure production, improving quality and efficiency, by involving people in a more holistic view was introduced in the downstream subsidiaries. This initial phase is hereafter referred to as Stage one. The next strategic direction, Stage two, for the company was to move their operational footprint upstream, focusing on mining, refining and metal production. This new strategic position implied downscaling and sale of component manufacturing plants, including the subsidiary described above. Stage three is described as the era of transitioning from a production system to a business system perspective. The latter clearly integrates functions as quality, HR and process- and product development, stepping from lean viewpoint of the production system to a realisation and formalisation of a broader understanding of manufacturing in the global production network. Recently, the business system also incorporates technology, adding central principles of Industry 4.0, and how these interact with humans, to their system. Despite the strategic focus, value chain position, economical up- or downturns, growth in global production footprint, and added perspectives and functions to the production system: key resources for developing and executing the system remain the same. Further, we will describe each stage, from one to three, more in detail,

[1] A much used programme for conducting social research; http://www.qsrinternational.com/products_nvivo.aspx

to grasp the driving forces behind the evolution and the role, function and behaviour of the change agents, or making true change.

Stage one

The case company, like all actors competing in global value chains, has continuously improved their products and processes to be attractive to demanding customers. Prior to Stage one, there are traces of structured plant vice improvement efforts, starting in the early 1980s as a customer, or OEM (Original Equipment Manufacturer), driven initiative. Such pre-Lean efforts included tools and methods as JIT (just in time), TQM (Total Quality Management), and PDCA (Plan-Do-Act-Check), summarising to a set of sub-systems for overall improvement of enterprises and suppliers.

In brief, this approach can be said to involve the customer from a logistics point of view, securing the right product, with the right quality and right amount to the right destination in time. Supporting the stringent terms of delivery means that all technical equipment must be available, leading to a maintenance strategy through the TQM method. Least, humans need to be involved in order to generate and execute a stream of continuous improvement, structured and followed up by the PDCA. KPI-measures were developed and cascaded top-down to teams and individuals, focusing on quality, logistics and economy.

Depending on trends in these KPIs, the case company was rated up or down compared to other suppliers of the OEM. If we look at this period, the change agents were primarily external. The customer that initiated the improvement programme had the resources to assess production capabilities, make roadmaps and strategic alignments, transfer knowledge to key resources, and to review and follow-up based on KPIs. A mandatory programme was introduced by the core customer, with the aim to improve overall efficiency, cost and delivery accuracy.

During late 1980s and the 1990s the case company experienced a considerably growth in customer- and product portfolio, going from supplying a few core customers to many OEMs. Expanding the business was rooted in the need for light weighting, platform thinking and globalisation in the automotive industry. The former led to added customer base, the latter to interchangeable components across car models and platforms, and globalisation to the need for production capacity close to the customer in Europe, Asia and North America.

To step up with this strategy the company invested 200 MEUR in the late 1990s to increase capacity in new and existing plants. However, ambitious growth in combination new equipment start-up problems and component quality issues turned into an economical down, around the millennium. New manufacturing management was put in place to recover the case company, launching a holistic production system as part of the turnaround process. The new manager appointed an internal person as responsible for development of the production system concept, based on lean theories, best practices from industrial peers and local knowledge, and to implement and sustain the system in the organisation.

The production system programme was an adjustment of what is known as Toyota Production Systems, often referred to as a Japanese production philosophy. The content of the system is a vision of how production should be undertaken in the future, with a staircase as a symbol of the roadmap ahead, showing how the company could get to the vision. Important states for each step were assigned, where the first step is about understanding the current situation and the need for change, the next one is team organising and co-ordinating of tasks, the third related to process stability and plant capacity, approaching the steady state of continuous flow on one-piece

production. At every step in the ladder, both the workers and the management have clear and simple tools and techniques to use to improve efficiency, reduce waste and thus increase earnings. The tools include unambiguous key performance indicators (KPIs) and whiteboards per team of operators with easy-to-read numbers and graphs. Every shift reports on issues such as production volume, quality issues, the maintenance tasks they have performed, possible irregularities in machines and uptime.

Team leaders and TPV co-ordinators were appointed and trained as internal ambassadors for the new system, responsible for applying principles, training their co-workers and making individuals and teams more knowledgeable and autonomous. One of the goals is to create greater independence for the workers, stating that the workers' acceptance and feeling of ownership are key in achieving the durable effects of changes. Consequently, the system includes team organisation across hierarchical levels in the company. Thus, the production system is not only a set of tools and techniques, but also reflects a shift in the philosophy underpinning the production of automotive components. Throughout the first year this structured and more holistic production approach gained acknowledgement from support functions, where managers from HR and Economy become instrumental in implementing the system, contributing respectively from the educational side and the follow-up of KPIs and economic benefits. From this stage, five key resources, or change agents, are identified, top manager, overall system responsible, HR, Quality and Economy directors: all of them are to be found in central positions in the further stages.

Stage two

When the case company turned its focus upstream, and by 2009, in the midst of the global financial crisis, completely ended their downstream operations of making components, a production system approach was launched in the metals division during 2006. Declining aluminium metal prices and a relatively risky position on the global cost curve for smelters, this production system was initiated to make the organisation more robust and competitive. Previous improvement programmes had been directed towards maintaining the capital-intensive equipment through TPM programmes (Total Productive Maintenance). When taking the decision to develop, implement and follow-up the system, at least in the initial phases, it was considered to what degree the company had the internal capabilities to lead the work ahead. The alternative was to hire consultants and their base of experience from similar implementations. A long-term philosophy for the improvement work was chosen, and thus, internal key resources were searched for. A natural choice was the experienced team from the downstream subsidiary, hiring them one by one from 2006 to 2008 when scaling up the implementation phase.

Having a centralised team in place, the system had to be adapted to the current situation, context and business segment. It turned out that those competitors in the metals production business had been part of the IMVP[2] programme, experiencing the concepts of Lean in a different context than mass production of components. Combining the knowledge the centralised team had from automotive production, with best practices from the business they were facing, made the foundation for the production system.

The Metal Production System became part of the case company's long-term strategy of being world class within safety, quality, productivity and profitability, and the system rests on the five underlying principles: standardisation of work processes, defined customer- and supplier relationships, optimised flow, dedicated teams

[2] IMVP – International Motor Vehicle Programme was initiated in 1979 by MIT. The research project was renamed in 2013 to Programme on Vehicle and Mobility Innovation (PVMI) after running continuously through three phases. The programme was responsible for coining Lean.

and visible leadership. The system was further detailed with defined standards, practices and tools belonging to each principle, but local adaption was emphasised in this structure allowing for context specific enablers and barriers in the production network. The latter prerequisite was due to the foreseen scaling effect.

The centralised team experience with Lean and production systems was based on one plant, one managing director and a relatively short response time from action to results. Now, the team had to deal with many plants, many management groups, different cultures, technologies and many views on how things should be done. From this scenario, it was obvious to the team that local change agents were needed to implement the system within given periods. To define and find these plant internal change agents, several strategies were outlined.

Traditionally the case company had strong unions, so having this formal and important group involved, engaged and represented in the implementation of the new productions system was part of the plan. Promises were given that the new system would provide a flatter hierarchical management structure, more autonomous and knowledgeable workers, and increased involvement in improvement work and decision making. Integrated in this plan was removal of the typical shift-leader or middle manager at shop floor level, supporting the new team structure where all members had certain responsibilities and roles.

Among the local change agent team, consisting of 2-4 people depending upon the plant size, at every plant at least one represented the union. Other important roles in the local team were quality manager and / or HR manager, aligning the new production system to existing systems having redundant objectives with regards to improving the organisation. Other members of the local team may be former shift managers, technical supervisors or highly regarded persons with a high degree of informal power in the organisation. This recruitment strategy to form local change agent teams was strongly rooted in the belief in the cultural and human dimension in implementing a new structure.

Thus, the new production system was immediately visible to every individual and team at plant level, by affecting daily work mode, as well as formal and informal structures. Much time was spent to align the central and the local teams' understanding of underlying production principles, methods, practices and tools, where the two teams worked closely, at operational level, in the pilot phase of implementing the production system. Short and long term improvement goals for each plant were defined together with plant management, and followed-up by revisions at all levels from the central change agent team. The mandate set by the main sponsor, the head of metal production division, was to decrease cost by X monetary units per ton metal produced within the period of three years. A reflection from the central team was lesser pressure from customers to improve production in the upstream industry. In the automotive sector, customers were always challenging and reviewing the case company, helping the improvement team to go forward. This drive was not that obvious in the new setting, and it had to be developed and emphasised by the central and local team. As the number of plants were introduced to the programme, the role of the central team changed slightly, from being more collaborative with the local teams, to be more workshop based and audit based. Maybe this was a natural evolution, since the number of central team members did not increase during the scale-up of implementation.

Stage three

From 2006 to about 2013 the production system had been through a development, implementation and operating phase, achieving the first major economic objective. Many "low-hanging fruit" had been picked, accumulating to a relatively good position on the global cost curve for smelters. Having in-place standardised processes, a clean and structured workplace, operating routines for the internal material flow, and more distributed and autonomous

teams, the organisation was looking for new challenges. The company had simply reached a point where the gradient of improvement was declining, known as a plateau on the theoretical S-curve.

Employees report upon further potentials for improvement, but characterise these improvements as out of the reach or responsibility of individuals and teams. Hence, the existing production system structure was not designed to take the next step. Examples of such potentials often involved technical issues, investments, functions and actors outside the department or plant etc, meaning that complexity of problem at hand was not a quick fix anymore.

The sponsor, division management, recognised the need to upgrade the production system, re-launching it as a business system at an annual production system conference. A transition from production system to business system indicated that more company functions needed to be involved, to make any significant steps forward. The central improvement team was given the task of developing content to the new business system, without being assigned considerably more resources. Based on trends in ratio of improvements and feedback from the organisation, it was clear that the technology domain had to be involved. This department consisted of researchers, technicians and industrialisation resources, working on long-term projects to solve complex problem statements, and verifying results to be implemented in new investments 5-10 years ahead.

Thus, the strategy was to find formal and / or informal key resources within the technology department, to be allied with the central team. It was soon discovered that the technology department used external consultants to extend the department's capacity and capability, with regard to many topics: for instance how the department should make an innovation strategy for their new and on-going projects. This strategy rested on portfolio thinking of projects, categorising them according to time, complexity, investment, and success rate etc., totally parallel to the new business system.

Several steps were outlined to bridge these two universes. First, a formalised network structure was established between the actors' central improvement team, technology department, plants and a small group responsible for operational excellence across the plant structure. The idea behind this network was to establish practices for sharing information and knowledge between the actors, and to translate and diffuse relevant knowledge to the operational units. The links for this diffusion was technicians, belonging to the central technology department, appointed to be responsible to connect to and support local improvement teams at plant level. This role was to be a liaison, supporting the plants concerning technology issues, and to transmit feedback from plants and to the technology office. The ambition was to accelerate the improvement work locally by the best available knowledge, and to bridge the short and long-term focus respectively, from an operational and R&D perspective.

Second, the central improvement team established a research projects called "step change" in mature organisations. The goal was to develop new knowledge on how large and multinational organisations can develop and sustain their improvement effort; a project also used internally to bridge the domains of operations and technology. Here, external researchers were ingrained in the boundaries and networks of the organisation, surfacing empirical findings to be discussed and refined in development of the network described above.

Third, in the wake of the trend Industry 4.0, the case company initiated attempts to map their potentials for automation and connectivity between man-machine. This initiative was clearly part of the step change, and business system, strategy to accelerate the company's improvement efforts. Again, externals were consulted to educate, inspire and map potentials, but responsibility was clearly linked to the business system.

Realising the need for renewing of the production system towards a business system clearly points to technology as the missing link. Involving technology as an element to the business system adds complexity in terms of number of organisational interfaces to co-ordinate technology readiness in short and long term time horizon, risk and rewards and responsibilities. We see that the central improvement team remained the same, in terms of number and people, but their internal and external network for enabling further success grew considerably.

Working with the co-operation inside different companies and organisation, in collaboration with the centralised, team it became clear that evolution of the phases and performance system was driven by other mechanisms, not provided by the different theoretical systems. For instance, Lean contains lots of tools for implementation: ways of looking for waste, dealing with waste or non-value adding operations. However, looking at the corporation and the evolution in time it seems that implementation and maintains of the various systems relied upon very different organisational and social mechanisms. Overall, two different mechanisms were identified, mentor-sponsor and insider-outsider mechanisms.

The mentor-sponsor mechanisms are a specialised arrangement where the corporation recruits managerial talent and places them in different companies. Giving them room and challenges in order to develop their talents. Part of this was the movement between executive jobs in various companies in the corporation. Spending some years in one of the subsidiaries in Australia, then moving to the main office in Norway, before appointed CEO in a Brazilian company, can illustrate this development programme of executives. “Climbing the executive ladder,” meant also binge part of the centralised team for the performance system when they were between executive jobs. Visiting subsidiaries and advancing how to work with the performance system was a vital part of the work in the centralised team.

The insider-outsider mechanism was a slightly different instrument. The central team or the mentor-sponsor mechanism recruited informal leaders, with good reputation internally in the actual company. In Norway with its long and strong labour union tradition, former union representatives were preferred in the positions of bringing the performance systems in use. In countries with other traditions, the recruitment of insider-outsiders were different, but still informal leaders of some sort was preferred. This recruitment process gave the insider-outsiders mandate and informal positions to initiate change.

In the beginning, with the customer driven improvement system, the people now occupying the central team were the insider-outsiders. As soon as they established the central team, during phase two, the two different mechanisms started to take shape. Having informal leaders as the main drivers of the change process made the initiation and maintains of the change processes much easier. Questions from the operators were answered quickly, and operators felt strong ownership to the process. One of them led it, was the general feeling.

Since the two mechanisms were operational during phase two, the number of people, insider-outsiders and mentor-sponsors, has not increased. Even during phase three, when the performance system developed with new issues and contents. It is a proof of true change where changes are embedded in daily operations.

Conclusion

This article illustrates how true change occurs in a multinational company. A Key point is that there are two mechanisms, mentor-sponsor and insider-outsiders. How these mechanisms work together and support each other is important. It enforces the feeling of ownership at many levels in the organisation and subsidiaries. Beside this, it also renews itself by constantly introducing new issues and content to the performance system. Another key

point is that the mechanisms are not part of the content added to the performance system. When the performance system refocused from TQM to Lean, the mechanisms remained the same. This article argued that popular managerial and performance tools are not central, but rather how mechanisms for initiating and maintaining focus on performance.

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EUROPEAN JOURNAL OF WORKPLACE INNOVATION

Unleashing Workplace Innovation in Scotland

Rosemary Exton

Peter Totterdill

Abstract

Amid the turbulent political and economic developments around the British departure from the European Union (Brexit), practical activities around Workplace Innovation have continued. The UK Work Organisation Network established Workplace Innovation Ltd, which is now based in Dublin as Workplace Innovation Europe. This short article describes the promising new programme of work on Workplace Innovation in Scotland, working with the support of the Scottish Government. In the uncertainty of the months and years ahead in the UK, Scotland can offer a lead which can be followed by the other regjons and nations of the United Kingdom.

Keywords: Engagement, Fifth Element, Participation, Productivity, Scotland, Workplace Innovation

Introduction

The concept of workplace innovation emerged at the end of the last present century as a systemic and dynamic view of organisations and organisational change. It recognises that attempts to improve organisational performance or working life are likely to be futile unless a company aligns its work organisation, systems, procedures, management behaviours, organisational structure, corporate values and leadership towards the same ends. In short, organisations are seen as systems of interdependent and continually changing parts.

The keynote Hi-Res study prepared for the European Commission in 2002 argued that the defining characteristic of workplace innovation lay in the creation of jobs and practices that "empowered workers at every level of an organisation to use and develop their full range of knowledge, skills, experience and creativity in their day-to-day work", emphasising the critical link between empowerment, learning, innovation and productivity. Workplace innovation thereby addresses a wide range of pressing policy issues for national and regional governments in Europe including productivity, product and service innovation, skills utilisation, demographic change, and health and well-being at work. More recently, Oeij et al (2017) have provided a comprehensive overview of the theory, practice and implications of workplace innovation for businesses, social partners, policymakers and other stakeholders.

This article explores the significance of the Workplace Innovation Engagement Programme (WIEP) in Scotland, a policy intervention designed to address the persistence of low productivity, and to promote the Scottish Government's goals of 'Fair Work' and 'Inclusive Growth'. We analyse the experiences of the nineteen very diverse companies that took part in two programme cohorts between November 2016 and mid-2018, including narrative accounts from participants and employee survey data. The challenges and dilemmas associated with its methodology design, implementation and evaluation are also considered.

The Workplace Innovation Engagement Programme

The devolution of certain powers from the UK to an elected Scottish Parliament has opened a different trajectory for economic development and industrial policy in Scotland.

Workplace innovation has been adopted as a key policy strand within the Scottish Government's Inclusive Growth strategy and its Fair Work Framework, both grounded in a commitment to win-win-win outcomes for companies and people: high levels of economic performance, high quality of working life and a high skill equilibrium in the labour market.

Scottish Enterprise, the country's economic development agency, instigated an extensive programme of awareness raising workshops, masterclasses and support services designed to increase the adoption of workplace innovation by Scottish companies, and this portfolio included the pilot Workplace Innovation Engagement Programme (WIEP). Workplace Innovation Limited, a not-for-profit organisation led by the authors of this article, was selected by Scottish Enterprise to deliver the programme.

The first cohort of ten companies was recruited by Scottish Enterprise in Autumn 2016, and a second cohort of nine companies entered the programme in September 2017. Both cohorts represented considerable diversity in terms of size, sector and geographical location. 'Engagement' in one form or another was cited by the majority of companies as the principal motivation for joining the programme, whether to support anticipated growth, manage internal restructuring, or to address a 'burning platform' created by changing market conditions.

Defining workplace innovation

The conceptual framework for the programme was provided by 'The Essential Fifth Element'3, a concept developed by Workplace Innovation Limited for the European Commission's EUWIN network to explain the benefits of workplace innovation and provide practical guidance on making change happen. An analysis of more than two hundred articles and case studies found a strong association between high performance and high quality of working life on the one hand, and four bundles (or 'Elements') of working practices on the other. Much of this evidence emphasised the interdependent nature of these practices, and the importance of aligning them to form a system of mutually reinforcing parts (Teague, 2005). The 'Fifth Element', or convergence between high performance and high quality of working life, is created by this alchemy (Totterdill, 2015).

Element	Indicative Practices	Association
Jobs and Teams	Individual discretion Job variety Constructive challenges Self-managed teams Collaboration within the team Reflective team practices	Improved workflow Enhanced quality Better productivity Cost reduction Engagement and retention Improved workforce health
Employee-Driven Innovation & Improvement	Productive reflection in teams Cross-team improvement groups Company-wide innovation events	Enhanced capacity for innovation & improvement Enhanced quality & performance Learning & development Engagement & retention Intrinsic job satisfaction
Organisational Structures, Management and Procedures	Reduced hierarchies and silos Strengths-based career structure Coaching style line management Simplified procedures	Improved workflow Cost reduction Better productivity Engagement & retention Improved workforce health
Co-Created Leadership & Employee Voice	Openness and transparency Visible leadership Delegated decision-making Representative participation	Strategic alignment Better decision-making Engagement and retention

3 http://uk.ukwon.eu/the-fifth-element-new

In addition to its value in promoting the concept of workplace innovation through EUWIN, The Essential Fifth Element was operationalised throughout WIEP. It provided the basis for the Diagnostic and Action Plans, and shaped the content of the Structured Learning, coaching and facilitation sessions.

Impact of the Programme

Evaluation of the programme's impact on business performance presents several challenges, not least because of the paucity of reliable and relevant 'before and after' performance measures at company level. While productivity is an understandable priority for policymakers, none of the 19 companies measured it directly nor were there readily identifiable surrogate indicators. A second, and equally challenging problem, is that of attributing changes in specific indicators to the programme itself. For example, one company achieved a £1.4m turnaround on profit without additional investment through increased volume and efficiency, entirely attributed by management to enhanced engagement and behaviour change. Yet this transformation had already started before WIEP, and there is no ready way of attributing a specific share of £1.4m to the programme.

We can draw two things from this example. Firstly, the attribution of a substantial profit turnaround exclusively to the introduction of practices related to workplace innovation is headline-grabbing in its own right, raising business awareness and strengthening the case for future public support. Outcomes from other companies may be less succinctly expressed but certainly add to this argument.

Secondly, it directs us to the key question underpinning this evaluation: did WIEP play a role in these transformations that was critical to the outcomes? Again, the answer cannot be entirely straightforward: who can untangle the multiple sources of inspiration or evidence that inform the introduction of an innovative work practice?

The assessment of outcomes is based on reports from participants during the programme sessions, anonymous survey responses and post project interviews. Each company participating in the programme made significant process improvements attributable wholly or in substantial part to WIEP. These process improvements led to faster throughput time, improved efficiency, more effective problem solving, enhanced competencies and/or greater capacity for innovation. In several cases, silo working has been reduced by enhanced collaboration between functional departments, leading to less bureaucracy and fewer conflicts or delays. By empowering teams, time previously spent on micro-management is freed up, leading to greater agility and speed of response.

Each of the companies also instigated mechanisms for stimulating and utilising employee ideas for product, service or process innovation, unleashing the potential for further wealth generation well into the future.

While few of the companies have quantified the economic benefits of these improvements, examples such as:

- the reduction of throughput time by nearly a third;
- the savings of £100k on a single improvement project;
- the resolution of a business-critical problem;
- a 6% profit uplift in affected teams;
- all provide an indication of the overall benefits to the Scottish economy when aggregated across all nineteen organisations.

Each of the companies reports improved levels of engagement, validated in some cases by their internal engagement survey results as well as by our interviews. This is likely to be reflected in better mental and physical health, the retention of older workers and enhanced skills development for younger employees. This was wider implications for health and social policy in Scotland.

Multiplier effects can also be added to the assessment of impact. For those companies on a 'burning platform', these financial gains will help to protect existing jobs. Elsewhere on the scale, enhanced innovation capacity or improved competitive advantage is likely to stimulate further job growth.

WIEP was designed specifically to enhance the competence of individual participants in terms of management and leadership skills, change facilitation and knowledge of workplace innovation, as well as to support them and their companies in introducing new working practices. Individual learning journeys were therefore important in securing wider outcomes for each company, and comments below place importance both on practical knowledge and soft skills acquired from the programme. Each individual participant reported important benefits in terms of personal learning and development. These can be summarised as:

- Enhanced knowledge and experience of workplace innovation.
- Exposure to wider experiences.
- Increased confidence.
- Ability to challenge established practice and influence others.
- Changed management style
- Encouraging curiosity and 'learning to learn'.
- Creative thinking.
- Peer-to-peer learning.

The importance of this is not limited to the individual alone; rather it reflects their continuing ability to drive positive changes forward in their companies. Over time, WIEP alumni will become an important asset for the future of the Scottish economy.

Sustainability of change and the avoidance of innovation decay lies at the heart of The Essential Fifth Element approach with its emphasis on the interdependent practices that can ensure the success or failure of changes. Each company considers that it has built a sustainable momentum of change through WIEP, though some recognise the need for further support especially those faced with adverse trading circumstances.

Finally, in evaluating the impact of WIEP it is also important to consider the costs of participation for the companies concerned. For most participants, WIEP involved a commitment of 8.5 days away from the workplace plus an estimated 4 – 8 hours on the Fresh Thinking Labs platform. This would be a substantial commitment for a conventional leadership course in which there was only an indirect impact on the business. WIEP, however, offers a triple helix of benefits: personal development, practical support for workplace change and peer-to-peer network building. This combination of outcomes may explain the lack of any negative comment from participants about the overall time commitment. Overall, feedback suggested that the content of the sessions positively supported practical action in the workplace as well as personal learning, development and network building.

Conclusion: WIEP's policy significance

Feedback on the programme was overwhelmingly positive, focusing on the overall quality of support, the learning, sharing and 'camaraderie' between companies, and the practical outcomes stimulated by WIEP. The design, content and delivery of the programme appears to have been validated by participant feedback via the different sources mentioned above sources. Experience from both Cohorts shows that the programme's impact lies in 'the sum of the parts' rather than in any one or two components, and this is at the heart of the added value provided by WIEP compared with à la carte menus of business support offered by Scottish Enterprise and other agencies. Group-based programmes such as WIEP offer particular value for money for public agencies, firstly because the majority of expert time is focused on the cohort as a whole, and secondly because peer-to-peer support is clearly an important motivator and a valuable source of ideas which comes as part of the package without extra cost.

The case for workplace innovation in enabling Scotland to fulfil its Inclusive Growth and Fair Work goals is strong, backed by a body of multi-disciplinary research and international experience, and not least by the WIEP outcomes reported above.

WIEP as a generative resource for the design of future initiatives

The UK has little history of policies or programmes designed to support workplace innovation. Only a minority of countries and regions currently enjoy proactive policy frameworks designed to promote workplace innovation: we are aware that these exist in the Basque Country (Spain), Finland, Flanders (Belgium), France, Germany, Norway, Singapore, South Korea and Sweden (Totterdill et al, 2016; Alasoini et al, 2017), whilst in Denmark such initiatives lie within the scope of its social partnership framework. Elsewhere workplace innovation tends not to be recognised in either skills or competitiveness policy frameworks. The importance of WIEP lies, in part, in its potential to demonstrate the potential of workplace innovation to a wider audience of UK policymakers.

Three notes of caution are required in addressing the design of future policy measures.

Firstly, policymakers need to adopt a long term perspective. The impact of programmes in countries such as Finland, France and Germany is closely related to their longevity, in some case covering more than four decades and representing a political consensus that creates resilience even when governments change. Policy funding cycles of two, three or even five years create uncertainty and lead to an overemphasis on short term delivery rather than building sustainable capacity.

Secondly, Ramstad draws attention to the importance of the wider social learning that can be generated by such programmes (Ramstad, 2009b). Experience from Finland and elsewhere shows that long term dissemination impacts are enhanced when a wider body of stakeholders are actively involved in programme implementation; these stakeholders include employers' organisations, chambers of commerce, trade unions, professional bodies, universities and other public agencies. This helps to ensure that workplace innovation forms a common agenda with a shared vocabulary amongst stakeholders, creating consistency in communication with enterprises and their employees. Scotland's approach to the promotion of workplace innovation is grounded in an explicit commitment to shared learning, both across the public sector and with the wider body of stakeholders.

Finally it is important to adopt a critical approach to the notion of 'transferability'. As with all policies and programmes, WIEP was created within a specific context, responding to needs and opportunities identified in one region. This case study has identified the broad characteristics and outcomes of the programme in the hope that WIEP can become a generative resource for policy innovation elsewhere, but such innovation will need to be grounded in its own specific economic, social, political and spatial setting.

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EUROPEAN JOURNAL OF WORKPLACE INNOVATION

Worklife Ergonomics in Digital Co-Creation:

The 'What', the 'Why' and the 'How'

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Tom Roar Eikebrokk

Abstract

Service improvement ("servitisation") and digitalisation are two megatrends that affect healthcare and public services along with other sectors in general. A new model is needed to prescribe how governance in an increasingly changing world of modern healthcare could be undertaken in a successful manner by embracing the power of Co-Creation. The concept of good worklife ergonomics is studied, both as a prerequisite, the 'What', and as a success factor in this context, the 'Why'. This article proposes that the moderating, risk mitigating, factor of broadly based employee involvement in all phases from planning and design to implementation will greatly improve quality in both innovation-process, and outcomes. A case-study from a public homecare living lab eHealth-project in Norway is visited to highlight some of the challenges ahead. Having established that employee co-creation can contribute to successful digital transformation of healthcare services, the 'How' question is studied. The question of how to enable effective employee co-creation is under-researched. Employee participation in co-creation is stated as an important enabler of digitalisation and service improvements. The Nordic Model for employee participation has proven successful for enhancing working life effectiveness and innovation. This article propose that these principles of employee participation can be further enhanced by using web 2.0 technologies for Enterprise Social Networks. The article concludes with a discussion of consequences for the digital transformation of healthcare services as well as implications for research and practice.

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Keywords: eHealth; Co-creation; Servitisation; Digitalisation; Healthcare; Worklife ergonomics; Digital transformation; Employee; The Nordic Model; Web 2.0; Enterprise Social Networks; Enterprise Social Media.

Introduction

The purpose of this article is to develop a conceptual process-model for co-creation in digital innovation, that also supports a good worklife ergonomics for employees. The article is a result of a cross-disciplinary collaboration, between one medical doctor, specialising in health and work environment, and two doctors of philosophy in social science, with management information systems as speciality.

In many industrial countries, people live longer, but habitually with chronic diseases, due to better living standards and medical treatment advances. These changing population demographics mean there is an increasing demand for healthcare services (Beaumont, Bolton, McKay & Hughes 2014). In eHealth, digital technologies accompanied by changes in healthcare delivery processes and services, offer possibilities for a lower cost healthcare system, needed to meet future increases in demand for services. These changes can be referred to as servitisation transformation (Lenka, Parida, & Wincent 2017) and put an emphasis on the interaction with customers that requires providers to offer customised and total solutions (Lenka et al. 2017). Digitalisation capabilities support such servitisation through employees' involvement and codetermination of what should count as key performance indicators. Digitalisation is "the use of digital technologies to change a business model and provide new revenue and value-producing opportunities; it is the process of moving to a digital business" (Gartner 2017).

But such change-projects often meet unforeseen barriers. Objections may be raised by the various professional groups themselves. Poorly rooted changes risks leading to inferior solutions over time, which may work against their purpose. In Norway, primary care and homecare is a concern for the public sector; municipalities. Generally, new technologies and working methods, as well as new service providers, will have to absorb all the "tacit knowledge" inherent in the public organisation to add new values to the services in an efficient manner. If employees are involved, they may be more inclined to become a driving force in the pursuit of a servitisation strategy, that relies on developing digitalisation capabilities, because the process of defining performance criteria promotes organisational learning (Braz, Scavarda & Martins 2011).

In Norway, primary healthcare and homecare is the concern of the municipalities. Local government-initiated digital, or eHealth pilot-projects are often unconnected experiments. A shared and common process management methodology for both development and implementation phases, that incorporates employee involvement and collaboration, will arguably be a useful tool for public sector change leaders who want to introduce new technologies and working methods, or invite new service providers that relieve or complete the overall welfare offer to citizens. We will term this as Co-creation governance ('Co-creation' as a term is disseminated further in Section IV). Such a tool will be useful in the complex task of maintaining quality for both service recipients and service providing personnel – employees in the healthcare system. Lenka et al. (2017) have recently proposed a model for co-creation between a product or service vendor and end-consumers. But in digital innovation in the Norwegian context, system vendors, and health care providers are most often separate entities, so the health care provider generally add value through the combination of human services and the application of technology, not technology alone. Seen from the view of the health care provider, the research and development challenge can be put as:

- How is employees' involvement ensured in digital co-creation governance?
- How does this involvement contribute to ensuring performance quality on all levels of responsibility?

A potential solution to this challenge is the development of a shared digital capability to continually improve service quality. When in place, this capability will ensure that internal and external service producers act through a continuous quality improvement cycle from plan, check, act, and correct that improves service quality over time. This understanding of digital capabilities is in line with Lenka et al.'s model. But this article argues that this capability must be developed along two dimensions of co-creation or collaborative innovation:

- Horizontally along the chain of value co-creation, from ICT-vendor, through service-provider to home care service users, but also
- Vertically along a line of innovation-process governance, from front-stage service-personnel employees to top-management.

These capabilities must subsequently be built "bottom up" with the involvement and participation of all relevant municipal employees, ensuring that new and increasingly more technology enabled work processes still remain employee friendly, and thus improve the quality of worklife of employees as well as patients' quality of life (Niels Frederik Garmann-Johnsen & Hellang, 2014). This article will also show how Lenka et al.'s aspects of digitilisation, servitisation and co-creation are linked to our highlighted aspects of (worklife) ergonomics, Business Performance Management, and (Information System) governance.

Ergonomics is an applied science concerned with designing and arranging things people use so that the people and things interact most efficiently (Merriam-Webster 2017). Ergonomics is the science of designing the workplace, keeping in mind the capabilities and limitations of the worker and in such way, fulfilling the goals of occupational health and safety, and productivity of employees (Punnett, Cherniack, Henning, Morse & Faghri 2009). The implementation of new digital services in healthcare involves several new work tasks, and thus represents new work processes and potential risk factors at the workplace. Knowledge of this should be addressed to prevent potential negative health effects among employees. This article proposes the term worklife ergonomics as a holistic term that encompasses the system of service production that spans over workplaces and involved employees. As such, worklife ergonomics as a concept considers the whole information system with people, processes and technology. Employee engagement and involvement brings a new and needed perspective into co-creation servitisation, and digitalisation.

Effective Business Performance Management, and (Information System) governance are important factors in achieving successful innovation, and the authors will show that such management tools need to be activated in parallel with the system- and service development processes. Employee involvement in the creation and execution of such management tools will serve to ensure the goals are met, and risks for failure are mitigated.

The co-creation literature (Grönroos & Voima 2013; Lenka et al. 2017) has shown how the involvement of customers and partners in all stages of innovation and process transformation can add value to new products and services. But there is a gap in this literature regarding the role of employees in innovation and process transformation in large service-organisations like e.g. healthcare-organisations. This article will also show the 'How'; how the process of digital transformation in healthcare services can benefit from employee co-creation, and how this can be achieved, using web 2.0 technologies. The propositions put forward here may contribute to both the digital co-creation model, and to healthcare innovation management practice.

The co-creation literature put an emphasis on the need for interaction with both customers and providers (Lenka et al. 2017). Customers are mobilised not only to express their views on existing services but also to take part in co-creating the design and implementation of new services. In the healthcare sector, this process of co-creation is believed to be an important enabler of service innovations as a response to the increased demand for healthcare services (Beaumont et al. 2014).

Despite this recognition of the need for co-creation, there is a general lack of research that can guide the utilisation of the concept in healthcare. The gap is characterised by scarce knowledge about the factors that enable co-creation (Frow, Nenonen, Payne, & Storbacka 2015; Grönroos & Voima 2013). Few studies describe the role of employees in co-creation (Galvagno & Dalli 2014). This gap is of particularly importance in the research on digital transformation of healthcare, due to the important source of knowledge that employees represent. Employees have first-hand knowledge of service demands, they know the process of service production from provider to client, and they have in-depth knowledge of the organisation where new technologies and redesigned service production processes will be implemented. What is more, employees know their colleagues and can influence their behaviour and acceptance of technology (Taylor & Todd 1995) and related changes in work processes (Eikebrokk, Iden, Olsen & Opdahl 2010). By including and stimulating employees in the process of co-creation, the organisation can

stimulate and utilise a new driving force in innovations both horizontally and vertically. Horizontally, this knowledge is utilised in the development of service innovations where employees know the service production processes from providers to customers and clients. Vertically, employees' knowledge and influence are utilised when innovations are implemented in the organisation as both a technical- and a social system. This vertical dimension, the co-creation between top management and all employees in the healthcare provider organisation, thus adds a new source of value creation to the co-creation model.

In healthcare organisations, nurses and other employees who are in direct touch with the patients, e.g. in homecare, accumulate detailed knowledge and experience about clinical practices. This detailed knowledge and experience is arguably of critical significance as input to the process of digitally transforming the same practices or creating totally new clinical practices. Likewise, employees can be instrumental in the redesign and implementation of new services. Employees can point out critical errors in the service design, seen from a caregiver to patient-relation point of view, that can overthrow otherwise beneficial changes.

Hence, the overall aim of this paper is to close this gap in the literature by exploring how employees can be involved in co-creating new healthcare services. Specific objectives are to extend co-creation literature to healthcare; defining employees role in digital transformation and co-creation in healthcare, and to show how web 2.0 technologies can enable such employee co-creation in practice.

Background

The so called Nordic model describes a working life arrangement that not only allows, but in fact requires by law, that employers and employees are cooperating on a regular basis. This article's authors find that the importance of employees as a resource in the development of innovations and in the implementation of innovations, are by and large ignored fields in digital innovation research. The authors agree with Ramaswamy and Gouillart (2010) in that by giving all stakeholders more attention and influence in the development of a "co-creative enterprise", it is likely insight, revenue and profit will increase. However, how this can be done in an appropriate and feasible manner is not explained in the literature. To describe the organisational significance of employee involvement in co-creation, we will refer to Scandinavian literature from different areas including system development, leadership and innovation, especially the article "Capabilities for Innovation: The Nordic Model and Employee Participation" by Nielsen et al (2012). The Nordic Model consists of: "First, a comprehensive collective agreements system with coordinated bargaining between the partners at multiple levels; next, employee representation, participation, and co-operation on decisions at various levels; and third, a surveillance system for improving the work environment (Nielsen et al. 2012)".

This opens up high employee involvement, and describes a potential mechanism for enabling co-creation in the context of service innovations. In this model, employees are important for innovations, based on their education, experience and contacts upstream and downstream of the value chain. They also know their own organisation with its culture, leadership, processes and technology. This model applied to the context of service innovation in healthcare will point to mechanisms that enable employees to contribute both to proposals for new service requirements. Employees can also give input on how these innovations can best be implemented in their own enterprise. Innovative projects will have arguably have extra strength when employees knowledge of service innovation (horizontally) is combined with their experience with service implementation (vertically), and when the goal and rationale of the project is effectively communicated by management.

Although healthcare consists of highly specialised and complex work tasks and patient pathways, and is highly labour intensive, little has been done to research co-creation in healthcare in combination with employee involvement. In countries like Norway, primary healthcare and homecare is the responsibility of local government on a municipal level. Employees are often involved in testing new types of welfare technology. But systematic employee involvement in problem analysis and -definition and deciding criteria for accepting or rejecting new technology pushes, seems absent in the eHealth (healthcare technology) literature. Perhaps management are hampered by the practical difficulties of involving all interested parties in large distributed service organisations.

To the rescue comes web 2.0, the use of social media within enterprises, also called Enterprise Social Media (ESM). ESM can facilitate an Enterprise Social Network (ESN), ESN being perhaps the most widely used term in information systems research, in this area (Wehner, Ritter & Leist 2017). This article thus seeks to inform leaders and practitioners, as well as research, on the rationale for how enterprises can leapfrog into involving and engaging employees on an enterprise-wide platform, using emergent ESM platforms like Workplace (by Facebook), Yammer, and likewise technologies. These technologies offer new opportunities, but also new challenges for eliciting employees proposals for new service requirements within digital healthcare, and inputs as to how these innovations can best be implemented in their own enterprise.

The problem formulation thus becomes:

1. How can the co-creation literature be extended to include employee involvement, in the context of healthcare?
2. How can web 2.0 technologies enable such employee co-creation in practice?

Oldham and Da Silva (2015) argue that three conditions are necessary if employees are to generate creative ideas:

- Access and exposure to new and diverse information
- Full engagement in the work role
- The experience of socio-emotional or instrumental support.

Oldham and Da Silva (2015) briefly mention social networking platforms, alongside other types of information and communication systems; electronic communication tools (e.g. email, instant messaging, voice mail, faxing, and paging), electronic conferencing tools (e.g. data conferencing, voice conferencing, videoconferencing, discussion forums, and chat systems), and collaborative work management tools (e.g. file sharing, group calendars, events and polls).

This rest of this article is organised as follows. In the next section, Methods, criteria for two different literature reviews and ac Living Lab case-study are disseminated. In the section III. Results we dissemintate the 'What' of co-creation and the role of employees, and also the rationale for such involvement, the 'Why'. We also present the 'How' (section III, C) both based on empirical study of a small-scale Living Lab-concept, and the scaled-up version (section III, D). Based on these finds, we propose a model and framework for employee co-creation in section IV. Propositions: Here we provide a framework for structuring and digitising an Enterprise Social Network for digital co-creation. In the Conclusion, the authors show how these article can contribute to closing the gap in literature on employees' role in digital co-creation.

Method

The methods applied consists of two different literature reviews and a case-study in a Living Lab project. To devise a conceptual model of worklife ergonomics, we first conducted a literature review to explore how ergonomics are used in relation to the concepts of eHealth, digitalisation and co-creation. The authors were looking for principles in the literature that could guide us conceptually in designing a system that would encompass good worklife ergonomics.

A. Literature reviews

A first literature review to map the 'What' question, was thus performed in October 2017. Using Google scholar, the literature was searched for articles containing the criteria (search string); ergonomics AND digitalisation AND servitisation AND health AND employees. By using such Boolean-logic operators; 'AND', the authors ensured that the findings were narrowed to only articles including all the key-terms, thus covering the desired context. This search and screening, resulted in three articles that provided concepts with substantially new insight (the rest of the articles screened only briefly touched the key criteria).

Next, to look closer at the 'Why' and 'How' questions, his article bases its proposition on the guiding principles of the Nordic Model (Nielsen et al. 2012), and web 2.0 technologies, enterprise social media, used in innovation management in organisations (Wehner et al. 2017).

To shed light on how Web 2.0 platforms can involve and positively engage employees in digital healthcare transformation processes, the authors performed a second literature review on the University of Agder's electronic library, February 2018. This library is connected to, and includes, the major search engines like e.g. Ebscohost, Scopus and Elsevier. The search criteria's chosen were simply "Workplace", "Facebook" and "Yammer", as these names are some of the most known social media-platforms for use within enterprises. The search was modified to peer-reviewed articles. The search gave 69 hits: screening these, the authors found 24 articles that could shed light on the research problem. In the screening we included articles from other sectors than healthcare, as we perceived that other industries use of enterprise web 2.0 may also inform the digital area of concern. The articles that were excluded from the research revolved around the use of social media platforms within the educational sector, something we perceived to be a special case, outside our scope. Most of the found and deemed relevant articles are relatively recent, i.e. from the last three years, showing that this is an area of growing interest to social science and information systems researchers.

B. Case study in an eHealth Living Lab

The identified concepts from the first literature (see III, Results, Section A and B), were compared with findings from discussions from awareness-workshops in an eHealth Living Lab action research project in a municipality in Norway (see III, Results, Section C). In this project, the research team (including the authors of this article) held six awareness workshops together with representatives from the municipality (a joint project manager, ICT manager, management and employee representatives from municipal homecare and nursing services). The workshops focused on these topics:

- Stakeholder analysis
- Service design and 'design thinking' methods
- ICT-business as innovation partners (ref. co-creation with ICT-system vendors)
- Capabilities and organisational learning
- Enterprise performance management, and
- Scaling up innovations from a Living lab.

Two of the authors also visited design workshops were front-line personnel employees in home nursing, together with municipal healthcare-department managers and digital researchers, discussed issues and requirements related to a specific service innovation, the use of digital night surveillance for patients in need of this, staying at home, with use of cameras with video conferencing functionalities.

Results

The results are presented in relation to the key terms of the literature search. The identified articles offered design principles that can govern good worklife ergonomics in digital co-creation processes.

C. 'What' - Ergonomics in co-creation – the role of employees

Neubauer and Stary (2017) describe ergonomics as acknowledging the role of employees in innovation as leading to both improvements and financial benefits, through human-centred design.

zHuman-centred design for interactive systems promotes the following key principles (Neubauer & Stary 2017):

- The design is based upon an explicit understanding of users, tasks and environments
- Users are involved throughout design and development
- The design is driven and refined by user-centred evaluation
- The process is iterative
- The design addresses the whole user experience
- The design team includes multidisciplinary skills and perspectives.

Of advocacy policies that could improve on this, Lopez-Gomez et al (López-Gómez, Leal-Ayala, Palladino & O'Sullivan 2013) suggest:

- Promoting the access to highly qualified personnel to develop new concepts and service innovations in-house
- Developing training methods for personnel to be able to adapt innovations acquired from external sources
- Need to better adapt curricula in education and training schemes to the demands of service economy
- Recognising informal learning so as to increase the attractiveness of continuous training for employees
- Promoting modern innovation management approaches that better support creativity and autonomy of service workers (López-Gómez et al. 2013)

D. 'Why' - Operationalising these principles in digital healthcare

While the forgone citations are from industrial contexts, Beaumont et al (2014) focus on service-design in digital healthcare, and propose that socio-technical, human-centred design approaches are better alternatives to techno-centric design. The article promotes joint innovation tools like service blueprints (Bitner, Ostrom & Morgan 2008; Lynn Shostack 1984) and stakeholder analysis (Garmann-Johnsen & Hellang 2014) in the form of Systems Scenario Tool (SST) (Hughes, Clegg, Bolton & Machon 2017) as a basis. SST combines stakeholder, and system gap-analysis.

The key points in the article are (Beaumont et al. 2014):

- Telehealth equipment and services offer opportunities for bridging the future gap between available health resources and demand created by an increase in life expectancy.
- Current use of telehealth is limited by inadequate business models and service designs that fail to generate successful partnerships and value for customers and suppliers.
- Traditionally, healthcare providers have taken a techno-centric approach to the implementation of new technologies, which often results in unforeseen barriers to success.
- Design and implementation of new services can benefit from a socio-technical approach, which gives equal consideration to both social and technical aspects of a complex system.

- Co-creation of value requires new tools, such as the System Scenarios Tool, which provides stakeholders with a holistic framework to help model the implications of service offering and business model choices.

E. 'How' (I) - Design principles applied on a Living Lab project

Comparing these organisational design principles with experiences from the Living Lab project workshops, methods such as stakeholder analysis (Garmann-Johnsen & Hellang 2014), and service blueprints (op. cit.), as devised in Beaumont et al, ound in the literature review (Beaumont et al. 2014), proved to be useful in designing new services. To the known service blueprint template for process notation (swim lane diagram) we found it useful to add a band for step purpose and key performance indicators, see Fig. 1. In addition to showing the process following a timeline or sequence (steps), the process diagram shows activities at different levels of the information system. The levels include both those parts that are visible to the end-user and the processes back stage, below the "line of visibility" (Bitner et al. 2008). Adding the purpose of each step purpose makes it possible to extract user stories to form a system requirement documentation for hand-over to Information Technology Infrastructure Library methods (ITIL) (Eikebrokk & Iden 2012; Iden & Eikebrokk 2013, 2014) or agile system development (Hoda, Noble & Marshall 2013), and refined further to precise technical architectures and instructions to ICT-system engineers. At the same time, adding key performance indicators can be a starting point for defining inputs to a joint enterprise process and performance management system.

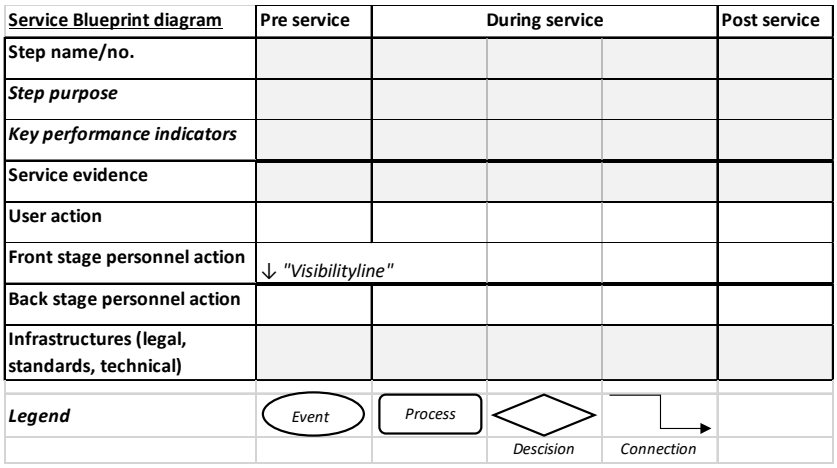

Figure 1. Service Blueprint diagram template, with "lanes" for purpose and performance indicators added

By adding the iteration of a workshop with all involved front-stage and back-stage personnel-employees, like in the Living lab-case (see Section II; Method), more aspects of a proposed innovation can be explored, before expensive investments and changes are made.

Although our process modelling exercise showed the proposed camera-surveillance case to be technically feasible, and may give potential benefits to homecare patients, it also showed that such an innovation also has major implications for worklife for e.g., home nurses, as well as legal and privacy-issues in general, that needs to be examined and discussed further. The status, as this article is being written, is that implementing the camera-surveillance case has been postponed awaiting more ground research into the needed technology security and quality aspects, while other innovation-paths are now explored in testlabs and living labs; e.g., replacing physical home-visits to patients with video-meetings.

Here, service blueprints and other service design-methods has been successfully applied, and pilots for new services may go live soon (in Fall 2018). Testing the users journey though new services, using low or high fidelity testing (roleplay) gives informed users a pre-experience of the benefits from new improved services. Experience from the Living Lab shows that participants in such a labtest can contribute with both real life problem narratives as input to design of new digital measures, and later as "ambassodors". Testpanel participants can thus positively influence patient groups and collegaous, and help ease digital technology adoption, validating the general finds of Taylor and Todd (1995), and Eikebrokk et al (2010) in this context.

F. 'How' (II) - Scaling up participation using web 2.0 technologies

We used Webster and Watson's (2002) method for conceptualising and grouping the finds of the second literature review. The results of this literature review are presented here.

The literature review gave us insights within the following concepts and conditional factors:

1. Customer satisfaction
2. ESN adoption
3. Gamification
4. Human resource development
5. Innovation ecosystems and urban planning
6. IT governance
7. Knowledge sharing
8. Management
9. Online design processes
10. Organisational learning
11. Risk factors
12. Avenues for future research

Below are these finds with references to the (group of) reviewed articles that offered new insights into these concepts.

1. Customer satisfaction:

Pinto's study (2015) shows that customers' (patients') positive attitude toward social media can be an effective method to enhance PCM (patient-centered medicine) and, ultimately, satisfaction.

2. ESN adoption:

Chin et al. (Chin, Evans, & Choo 2015) illustrate that the likelihood of ESN use is significantly influenced by technological, organisational, social and individual factors. Sharma and Bhatnagar (2016) state that it takes a lot more than mere investing in social media work tools; organisations need to build a "culture of openness and transparency", where employees not only "feel free" to share ideas and opinions but also "feel happy and involved" with high-touch points in their entire employment experience. Doing this, ESN can be utilised to build social capital (trust) within a company (King & Lee 2016). In Razmerita et al.'s study (Razmerita, Kirchner & Nielsen 2016) drivers for user adaptation are identified as:

- Environment of helping others
- Monetary rewards
- Management support
- Management encourages and motivates knowledge sharing behavior, and
- Knowledge sharing is recognized

- Barriers to adaptation of ESN-ESM are:
- (The perceived risks of) Change of behavior (from hoarding information to sharing information)
- Lack of trust
- Lack of time

3. Gamification:

The Li et al. article (Li, Nagel & Sun 2011) identifies gamification as an important driver for making ESN (and ESM) work. They exhibit four case-studies; Google, Apple, Procter and Gamble, and Ace Hardware. Ace hardware uses the network to solve problems, and exchange ideas and experiences. Google allows employees to spend 20% of their time on their own-defined projects. These ideas are voted for on an "ideation white board". On the Google Intranet; "MOMA" all information is compiled in to a searchable database, available to all employees. Procter and Gamble includes the employees of partners in their extended ESN, for ideas to new product-lines. Apple has gone further, and has built a whole ecosystem for revenue generating services (Li et al. 2011).

Gilbert et al. (Gilbert, Smith & Sutherland 2015) advocate establishing an idea-capture mechanism, using rewards and "Design Thinking" (Stickdorn, Hormess, Lawrence & Schneider 2018) competitions. Although monetary mechanisms and career advancement are important, the "power of fame and franchising should not be underestimated". Gamification can also be used to enhance learning from enterprise training (Cardador, Northcraft, & Whicker 2017).

4. Human resource development:

Allowing employees to "brand themselves" will create enterprise winners in the emerging economic environment for the information age, using social learning or e-learning tools (Cascio, 2014).

5. Innovation ecosystems and urban planning:

The innovation eco-system thinking can be extended to whole cities with their residents and businesses. This could be of interest also within an digital innovation context, as local government, in charge of primary healthcare, as in Norway, also has the double goal of stimulating business development, alongside solving healthcare needs. San Francisco city founded the 'tech chamber of commerce' sfciti.org. "An important stated goal of (sfciti.org) was to encourage member firms to make pro-bono interventions in the city's urban infrastructures. The first public statement consisted of a short video circulated via social media (McNeill 2016)".

6. IT governance:

Alimam et al. (Alimam, Bertin & Crespi 2017) highlight the need to integrate ESM with the enterprise's existing mechanisms for IT governance and architecture. As the enterprise wants to promote desirable behaviors like collaboration and innovation, integration of these behaviors into an enterprise wide framework seems necessary.

7. Knowledge sharing:

Knowledge sharing is an important asset to an organisation. Especially in distributed organisations, e.g. multinationals, the expatriates rely on ESM for teamwork (Omar, Dahalan & Yusoff 2016). Social mechanism of a more light nature, sharing humour and other kinds of relief, may encourage use of ESM (Gibbs, Eisenberg, Rozaidi & Gryaznova 2015), and thus also for more directly productive work.

Many organisations have social responsibility goals and strive to be able to hire and include employee-groups with special needs (Vohra et al. 2015).

8. Management

ESM needs to be managed, but there are no clear rules as to the level of management needed, it depends on the circumstances, according to Guinan et al. (Guinan, Parise & Rollag 2014). The article advices three approaches; top-down, from middle management (middle out), and bottom up, depending on the context. In a context with many

silos (relevant to e.g. a healthcare setting and its many stakeholder-groups), middle out may perhaps prevail as the best approach.

Niell and Moody (2015) identified nine strategic roles and the associated responsibilities (involved in social media management) including policy maker, internal collaborator, technology tester, communications organizer, issues manager, relationship analyser, master of metrics, policing, and employee recruiter.

e-Leadership may be a lot different from ordinary hierarchical management. Avolio et al. (Avolio, Sosik, Kahai & Baker 2014) produce a model that shows that the transition management will go through as enterprises become increasingly digital. In general, technologies tend to "flatten out" leadership, and decision-making. There will be a need for leadership development. ESN can be used to enhance such development (Cullen-Lester, Maupin & Carter 2017). Other studies: Korzynski (2013) show "that online social networks are more useful for participative and consultative leadership style on social networking platforms than for directive leadership style (op. cit.)". According to Korzynski (2013) the more employees are empowered, the more benefits can be realised from ESN-ESM.

9. Online design processes:

One article presents a solution for implementing social media functions into a software development project. Alvertis et al. (2016) reports from an EU-funded project, resulting in the site named CloudTeams (Prinz, 2018). The solution also entails connectors to third party services, and reward end-users for their participation in "campaigns".

10. Organisational learning:

The organisational learning aspect of ESN-ESM is disseminated in several articles found in the review. Increased emphasis on ESM may represent a new stress-factor for many employees. So the organizations should facilitate programs to improve employees digital literacy (van Zoonen, Verhoeven & Vliegenthart 2017).

Increased intensity of collaboration in many environments, like e.g. press-work, creates the need for more fine-grained tracing of everyday activities (Pigg 2014).

Using quantitative survey-evaluation methods, Qi and Chau (2018) have tested the positive consequences of ESN-site (ESNS) usage, and confirm that "ESNS usage is an important antecedent of knowledge creation and knowledge sharing. ESNS usage is also an important contributor to organisational learning. Knowledge creation and knowledge sharing both mediate the path between ESNS usage and organisational learning (op. cit.)".

11. Risk factors:

ESN-tool use is not without its risks, both reducing potential, and for direct economic loss. Comparing with the Excellence theory (Grunig 2013), Verheyden and Cardon (2018) finds that management ideology may hamper the information producing abilities of employees and also the realisation of benefits from using social media.

Employees' use of ESM could potentially compromise business secrets: Väyrynen et al.'s (Väyrynen, Hekkala & Liias 2013) conceptual article proposes eight questions to ask regarding what roles and authorities different categories of employees have. Based on this, strategies to meet knowledge protection challenges can be devised.

12. Avenues for future research

ESN is a topic in need of more research, according to Ellison et al. (Ellison, Gibbs & Weber 2015): "As ESNSs are introduced into a wider range of organisations, it will become increasingly important to study, theorise, and design for the ways in which use of such tools is transforming knowledge sharing and other organisational practices (op. cit.)".

Propositions

Based on the authors analysis of finds the literature reviews and the case study, propositions are here made for:

a) Governance principles for co-creative processes involving employees
b) Realising scaled up-participation using web 2.0 technologies

G. Governance principles for co-creative processes involving employees

This article proposes that enterprises that want to succeed with digital innovation and co-creation over time need to secure the involvement of their frontline personnel, because they are key to establishing a Business Performance Measurement system. There are numerous definitions of what a Business Performance Measurement system contains. In a literature review, Franco-Santos et al (2007) identified these main features:

1. Performance measures
2. Objectives/goals
3. Supporting infrastructures (including data acquisition and analysis)
4. Targets (gauges: does the enterprise meet its targets)
5. Causal models (what are drivers for successful performance)
6. Hierarchy/cascade (organisation, delegation of concern)
7. Performance contract (negotiated contractual relationships with stakeholders)
8. Rewards (incentives)

Co-creation is a relatively new term. It has become part of the slogan and strategy of many universities. But what does it mean in practice and where does the term come from? A recent review by Galvagno and Dalli (2014) traces the term back to three theoretical perspectives including service science, innovation and technology management, and marketing and consumer research. The literature on co-creation operates on two levels of analyses: company centred vs. customer experience centred. Apparent themes in the literature include co-creating value through customer experience and competence, service innovation, including digital customer involvement. Today, service science and marketing play a major role in the literature and refer to the involvement of customers in the supplier's product- and service development. In information systems research and management research, the term co-creation has been used by, among others, Grönroos and Voima (2013), and Lenka et al. (2017).

Lenka et al. have provided a model that will explain the connection between "megatrends" in industry and working life; digital development and change ("digitalisation") and development of a service culture in production-oriented environments ("servitisation") through co-creation processes. As authors, we agree with Lenka et al., that an important prerequisite for success is the development of digitalisation capabilities in service-based organisations. These digitalisation capabilities in turn, will govern the "Value Co-creation" mechanisms; consisting of two main mechanisms; one linked to needs analysis (perceptive mechanisms) and one linked to design and construction cycles (responsive mechanisms). Between these two (from observation to design and construction), knowledge about measurement points is transferred to goals and values that form the basis for implementation of the service (in design and construction). Both mechanisms must be repeated for each overlapping link in the value chain.

Moreover, we propose that the change work done in these overlapping links in the value chain can be expressed (including the core, the actual digitalisation capability) as Deming Cycles (Plan-Do-Study-Act), see Fig. 2.

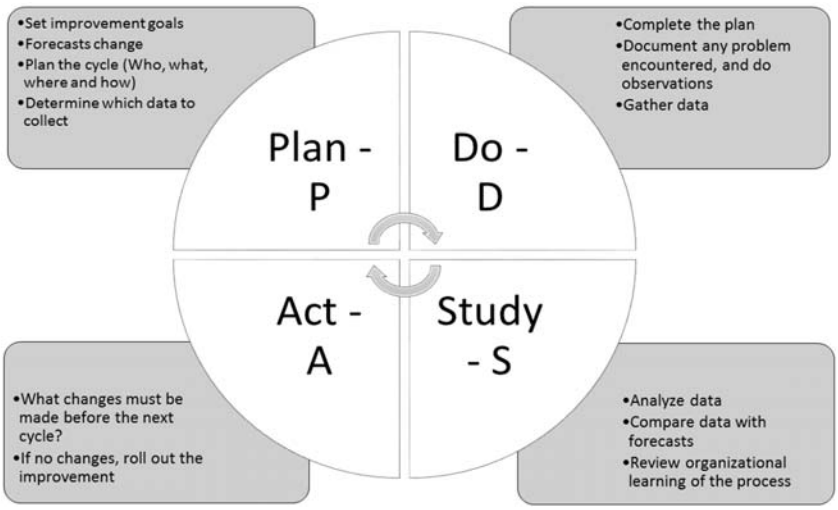

Figure 2. Deming cycles

Iterative development-cycles like this allows the time for involvement of both external and internal stakeholder groups, and should include discussing goals and measurements. The saying “You can’t manage what you don’t measure”, referring to our sub-title, is attributed to both W. Edwards Deming and Peter Drucker.

Focus in achieving worklife ergonomics will be the relationship between the observational input and response outputs from the service co-creation and system co-creation cycles as a prerequisite for successful digital co-creation governance. Lenka et al. state that value is added at each part of the chain, as new actors bring in new experiences, see new opportunities and add new value to the service. This includes the service consumers themselves, and their next-of-kin. The measurement system will be a trigger for new innovations, while being a missed "GPS" guidance system, to find the way (Pavlov & Bourne 2011). Such a system will also act to spur organisational learning, providing incentives that motivate and intensify innovation (Pavlov & Bourne 2011).

To stay relevant, since the frames, and context, of the digital area is rapidly changing, we believe that the overall quality system (Process and performance management system) itself must be agile and subject to at least annual evaluation (a slower Deming cycle), while the services that the system controls, go through its many and fast Deming cycles. Together, these form a proposed conceptual process-model for co-creation in digital innovation, that also supports good worklife ergonomics. The concept is illustrated in Fig. 3.

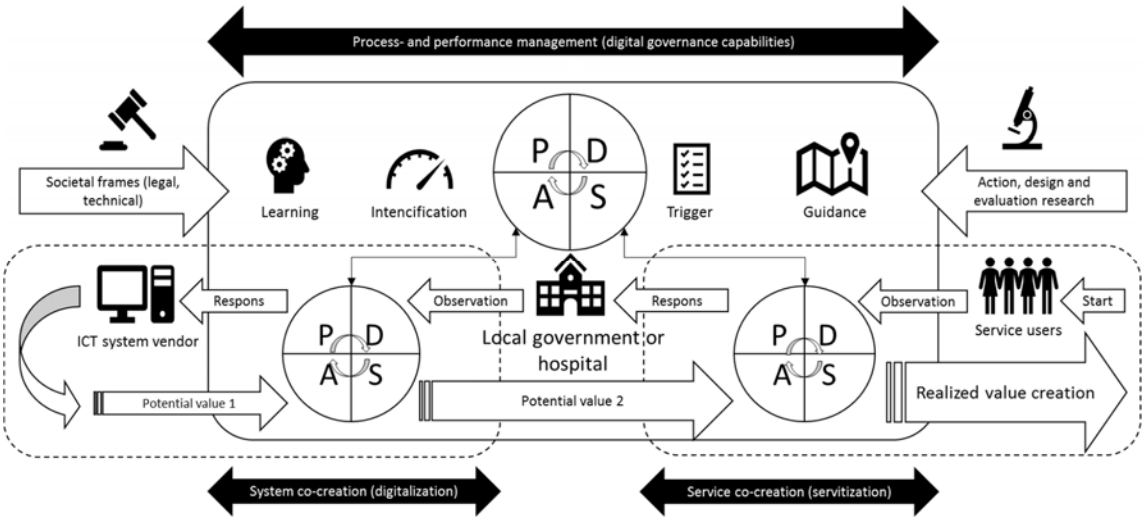

Figure 3. Process-model for co-creation in e-Health innovation; The ecosystem (Based on Lenka et al., 2017)

When it comes to the Plan-Do-Study-Act cycles in the value-chain (system co-creation, service co-creation) – different process modelling tools, like swim lane diagrams, can be used to visualise, convey, and discuss the consumer journey with stakeholders, using e.g., "Service Blueprint" or similar (Lynn Shostack 1984; Schneider & Stickdorn 2011).

All in all, the goal is that the entire ecosystem is set in a state of continuous improvement and value innovation, and that a shared and improved service culture in the municipalities and their partners, (servitisation), develops through digital transformation. This secures the ability to go back and start again, if necessary.

H. Realising and scaled up-participation using web 2.0 technologies

Based on the findings from the second literature review, and analysing this through the lens of the general literature on co-worker co-creation, we can list several healthcare innovation capabilities provided by a broad participation in digital transformation and digital innovation processes, open to all involved employees in healthcare (illustrated in Figure 4.). This figure (4.) also illustrates the main benefits:

- Increased knowledge base
- Enhanced digital worklife ergonomics (digital systems that are better adapted to real life work-processes)
- Increased involvement and implementation
- Support from employees in designing and implementing change

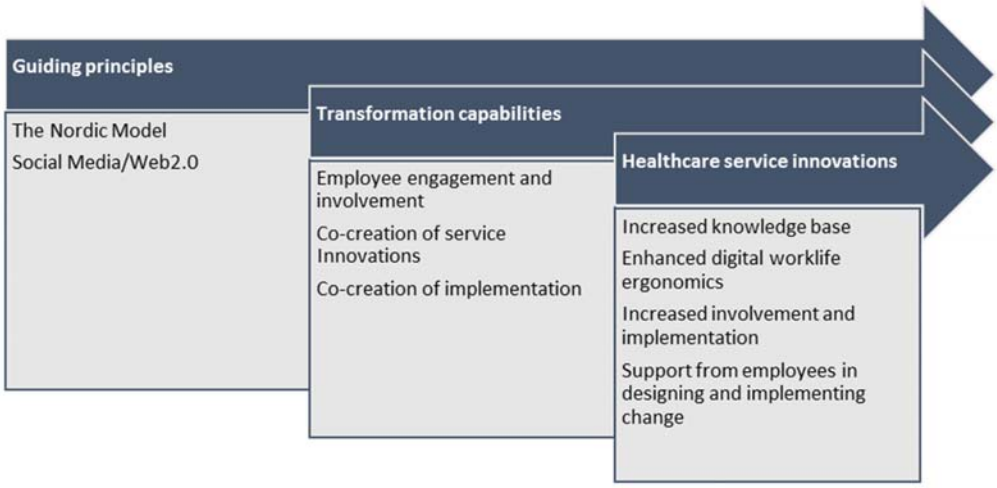

Figure 4. A conceptual model for sequential and overlapping process steps and impacts in co-creating digital transformation in healthcare

Based on the review on web 2.0 concepts, we will here present some propositions for how employee involvement can be secured, to achieve these desired benefits and capabilities. We propose that the effect of employing ESM can be enhanced by adding a plan and structure to the co-creation process. When looking for a framework that can provide plan and structure, the authors have used the Design Thinking philosophy (Dorst 2011; Schneider & Stickdorn 2011) as a guide. Design thinking is a human- and needs-centric approach to innovation (op. cit.) that is well aligned with the needs of the very labour-intensive healthcare sector. Arguably, Service Design Thinking (Schneider & Stickdorn 2011) is the new model for collaborative Business Process Management (Garmann-Johnsen & Eikebrokk 2014), and addresses and simplifies some complexity issues in business process modelling (Garmann-Johnsen & Hellang 2014).

The British Design Council's Double Diamond – model (Design-Council, 2018) can thus be used as a framework for casting several of the ideas and concepts from the literature review as steps in a design process. The Double Diamond – model in its many variations has rapidly become a standard for guiding design processes in a user- and problem centric manner, associated with the Design Thinking philosophy (Stickdorn et al. 2018). The Diamond shape symbolises activity levels through a time-line, and due to activities and material collected or produced peaking midway in each Diamond. The Double Diamond's two parts revolve around problem and solution respectively, with decision milestones at start, end and in between the two "Diamonds". The problem-Diamond is divided into two distinct phases:

• Discover (the features of the problematic area, and its stakeholders), giving insights into the problem

•Define the area to focus on. Questions to ask are: "Which area matters most? Which area should we act on first? What is feasible?"

Starting joint problem-solving with the problematic situation, can widen the frame for (co-)creation (Dorst, 2011). Arguably this opening of a discourse should encompass all employees to achieve the added value that the enterprise is striving for (op. cit.). The British Design Council states that; "One of the greatest mistakes is to omit the left-hand

diamond and end up solving the wrong problem (Design-Council 2018).” This can underpin e.g. the concepts of knowledge sharing, organisational learning and the online design process. Having defined the problem, a brief for the design can be formed, thus starting the solution-Diamond, where the focus is to:

• Develop: potential solutions (in plural; testing different alternatives). “This process of trial and error helps designers to improve and refine their ideas (op. cit.)”

• Deliver: solutions that work, this tie narrowing the field based on decision criteria from the brief, and evaluations done underways.

This should be comprehended as an iterative process. “This means that ideas are developed, tested and refined a number of times, with weak ideas dropped in the process. This cycle is an essential part of good design (Design-Council 2018)”.

We propose that this “wisdom of the crowd”, especially using the inherent knowledge and wisdom of employees, can be mobilised throughout the process using ESN – ESM, for:

1. “Service innovation”; choosing the right problem; defining a new service blueprint (Bitner et al. 2008)

2.“Implementation”; including new digital measures; choosing the right solution

The process-structure should also include a joint process for digital governance, as the literature review has shown a need for management of ESN/ESM and the whole design process; measuring and ensuring other concepts found in the literature review (e.g. customer satisfaction, human resource development and risk factors), ref. Fig. 5:

3.Process management, IT service transition governance (Eikebrokk & Iden 2012), consisting of:

3.1. Setting goals (based on problem)

3.2. Decision criteria (quality measures; based on problem definition and design brief, following the “Service innovation”; 1. above)

3.3. Evaluation (evaluation the total solution, following the “Implementation”; 2. above. Also evaluating the whole design process)

E.g. polls on ESM (gamification) can be utilised for advising top managers, as to what measures should be prioritised, and how. If necessary, all steps and phases can be iterated until the aspired level of confidence in the measures and potential values are reached. Leveraging the increased knowledge base, and support of all employees, with defined criteria’s and milestones for decision-making, chances for successful implementations are optimised, and the potential risk for failed investments may be mitigated.

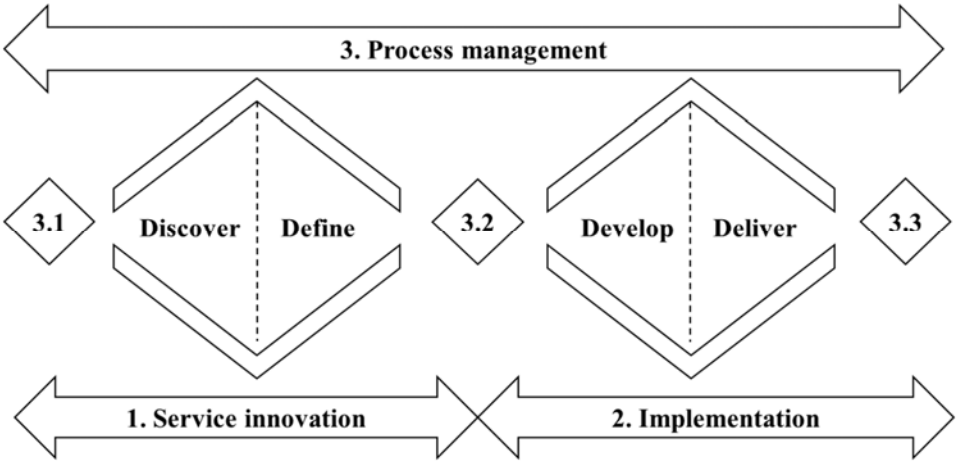

Figure 5. "Double Diamond" framework for Web 2.0-enabled digital design process

Adding the support process of process management, allows for having a holistic governance of parallel innovation projects and involving employees in the performance management of the whole segment of healthcare, as well in individual welfare technology projects (Nudurupati, Tebboune & Hardman 2016).

Conclusion and future work

This article has shown that for the purpose of establishing a holistic digital innovation ecosystem-concept, and achieving digitalisation and servitisation throughout the organisation, the following elements are necessary; digital governance capabilities, process and performance management methods and systems that align new technologies with high quality work processes (worklife ergonomics), and appropriate tools to visualise and communicate processes and services with end-users, as well as different professional employee groups involved, front stage and back stage. By involving employees though iterative project-cycles and achieving a general consensus on what goals and measures should count, the necessary sorting and maturing of ideas is achieved, so that failed changes can be avoided before too great investments are made and lost.

Other factors that are necessary are processes that align local service strategies with central government legal and technical frames (compliance). More research is needed on how these different eco-systems (central, local) can be efficiently combined.

More research is needed into future innovative means of capturing both qualitative and quantitative data about end-users or patients' using "Big data"; combining e.g., social media and transaction data from the service systems. More action, design and evaluation research are also needed for devising how the proposed model (Fig. 3) can be implemented and operationalised in a manner that ensures both employee and end-user involvement and commitment for achieving a high quality, lower cost health care system, while maintaining a high quality of worklife.

This article has also shown digital transformation and innovation in healthcare with employee involvement in the co-creation process, can be further enhanced through the help of web 2.0 technologies. The article contributes to the growing co-creation literature (Grönroos & Voima 2013; Lenka et al. 2017), by adding the vertical dimension of internal co-creation between healthcare management and all employees. This contributes to answering our first

research problem-area; the 'What' and 'Why' of how can the co-creation literature be extended to include employee involvement, in the context of healthcare?

These capabilities and benefits are made practically feasible, even in larger, distributed healthcare organisations, by web 2.0 technologies (enterprise social media). We have shown examples of use cases and concepts found in literature, and proposed a process structure, that can inform healthcare managers, and web 2.0 vendors. This is a response to our second research problem-area; the 'How'; how can web 2.0 technologies enable such employee co-creation in practice (also in larger, distributed organisations)? A framework for the enabling structure is devised and illustrated.

Further research could deal with the question of how such use of digital technology in the co-creation process can enhance and clarify the role of employees. The clarity of roles and tasks for employees in introducing new technology at the workplace is also a necessary workplace environment factor, which prevents adverse health effects among employees; so-called technostress (Karasek & Theorell 1990).

A model-test of the proposed frameworks could show if successful implementation and outcomes are enabled, and risk-management of adverse health, safety and environment effects when introducing new technologies are improved.

Some healthcare organisations have programmes for encouraging open innovation (Chesbrough 2006) or capturing ideas from employees' inventions, and some organisations use software for this, like e.g. Spigit (Spigit 2018), Ideation360, Inductsoftware or the research-based CloudTeams (Prinz 2018). Further case-studies; e.g. action- and design research could show how such software could involve and engage the whole organisation in digital transformation and co-creation in combination with web 2.0 technologies.

Limitations

Our conclusion is partly based on search in scholarly literature within fields like information systems and management using specific search criteria. Other criteria might have given other finds of relevance to this article's scope. There may be instances of web 2.0 and ESN practice of interest to this research and reported in scholarly literature that has not been found by this article's authors.

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How does the PRIDE theory describe leadership and organisation that enhances vocational education teachers' (VET) enthusiasm? An analysis of enthusiastic Finnish VET-teachers' perceptions

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Kaarina Määttä

Abstract
The purpose of this research was to analyse vocational education teachers' (VET) perceptions of enthusiasm at work. The analysis leaned on positive organisational theory and an index called PRIDE. Finnish VETs (N=15) who described themselves as enthusiastic teachers were interviewed with a themed interview method. The analysis followed the principles of qualitative content analysis. The data were categorised in a theory-based manner into the elements of PRIDE theory: positive practices, relationship enhancement, individual attributes, deviant leadership, and emotional well-being. According to the findings, the elements of PRIDE appeared interconnected in a manner that could be enhanced through leadership and organisation of work. Three themes appeared common to all elements: opportunities for development and to develop work, recognition and use of strengths and potential, and enhancement of interaction and collaboration. The research brought important information about how VETs could cope with the current changing work, and maintain their enthusiasm during the reform process of vocational education taking place in Finland. In addition, suggestions were made on how to lead and enhance teacher enthusiasm as a part of renewing vocational teaching.

Keywords: positive organisational scholarship, positive leadership, teacher, enthusiasm, engagement, VET

Introduction

Positive organisational theory is interested in positive phenomena and processes taking place in organisations (Cameron 2013). One example of these phenomena is enthusiasm experienced by employees. Enthusiasm is seen as a part of work engagement, being its affective element and manifestation (Kunter & Holzberg 2014; Macey & Schneider 2008; Schaufeli 2018; Schaufeli, Salanova, González-Romá & Bakker 2002). In research, work engagement and enthusiasm are often connected with organisational productivity and quality (e.g., Demerouti & Cropanzano 2010; Schaufeli 2018; Thompson, Lemmon, & Walter 2015; Xanthopoulou, Bakker, Demerouti, & Schaufeli 2009). When it comes to educational organisation, teachers' enthusiasm has been noted to be connected with students' academic performance and motivation (Keller, Neumann, & Fisher 2013; Kunter et al. 2013; Patrick, Hisley, & Kempler 2000) as well as teaching quality (Frenzel et al. 2009; Kunter et al. 2011, 2013). These findings appear promising when thinking about the current situation in Finnish vocational education. While during the ongoing big educational reform resources for vocational education have decreased, education is still expected to be more productive, efficient and of higher quality (Minedu 2017; see also Owens, Baker, McDaniel Sumpter & Cameron 2016). One assumption is that if VETs could maintain enthusiasm, if they could be even more enthusiastic about their work and show enhanced work engagement, the goals of the reform could be better achieved.

The reform takes vocational education into a competence-based direction. Simultaneously, it changes and expands VETs' work and creates new demands on them. Teachers are expected to work creatively by supporting students' individual needs, and in collaboration with various networks and work life (Minedu 2017; see also Vähäsantanen & Eteläpelto 2011; Vähäsantanen, Saarinen & Eteläpelto 2010). The new approach necessitates VETs' willingness to renew their way of working and develop their own expertise. These elements are an important part of teachers' enthusiasm: enthusiastic teachers are interested in developing their work and expertise, and are willing to make the effort in their job (Kunter & Holzberg 2014; Macey & Schneider 2008; Wenström, Uusiautti & Määttä 2018). Furthermore, they show proactivity during in the changing work (Lam, Cheng & Choy 2010; Macey & Schneider 2008). Our assumption is that by enhancing enthusiasm in VETs, it would be possible to strengthen the development of teaching according to the idea of the reform.

Organizational factors, including leadership, influence teachers' enthusiasm (Wenström et al. 2018; see also Leithwood, Harris, & Hopkins 2008; Thoonen et al. 2011). Therefore, PRIDE can offer a useful way of analysing enthusiasm. In this research, our purpose was to analyse what kind of leadership and organisations enhance enthusiasm in VETs, according to their own perceptions. By using PRIDE theory, this research provides a new and positive viewpoint on the reform of vocational education and VETs' enthusiasm.

It is reasonable to assume that positive leadership and organisational culture may enhance enthusiasm, well-being and success at work, that includes expertise and ability to work with various people: and that requires constant learning and renewal (Cheung 2014; Davis 2013; Fredrickson & Dutton 2008; Geue 2018; Salmi, Perttula, & Syväjärvi 2014). Therefore, this research also contributes to the research of vocational education organisations and leadership (Beverborg, Sleegers & van Veen 2015; Bloom, Lemos, Sadun & Van Reenen 2015; Coates et al. 2013; Jäppinen & Maunonen-Eskelinen 2011). In addition, the research expands and strengthens research on PRIDE theory (Cheung 2014; Hsiesh & Shannon 2015; Ince, Jelley & MacKinnon 2016) and in the field of positive organisational theory in general (Doldor, Silvester & Atewologun 2017; Rich 2016).

Theoretical background

The goal of positive organisational research is to recognise and strengthen such practices and methods that make the organisation and its members flourish, be well, and work efficiently (Cameron 2013; Linley, Harrington & Garcea 2013). One way of analysing these factors is to use the positive organisational index, in other words the PRIDE theory (Cheung 2014, 2015; see also Määttä & Uusiautti 2018). According to PRIDE, a positive organisation consists of the elements of Positive practices, Relationship enhancement, Individual attributes, Deviant leadership, and Emotional well-

being. The more evident these elements are, or the higher the positive organisational index is, the better results the organisation is likely to achieve when it comes to the well-being of personnel, productivity, efficiency, and quality. Although PRIDE was developed to quantitative measurements (Cheung 2014), in this research, it is used as a theoretical framework for qualitative analysis of VETs' enthusiasm.

Positive practices mean activities, methods, practices, or resources that help performing well at work and enhance learning, professional growth, and flourishing at the levels of daily work, organisational strategy, leadership, and organisational culture (Cameron, Mora, Leutscher & Calarco 2011; Cheung 2014). Positive practices are positive because they enhance positive emotions and attitudes and thus support positive atmosphere at work (Hartel & Ashkanashy 2011). Positive practices are connected with energy, work engagement, and enthusiasm (Albrecht et al. 2015; Geue 2018), which positively influence organisational performance and productivity, too (Albrecht et al. 2015; Cameron 2008; Cameron et al. 2011; Thompson et al. 2015). Examples of positive practices are open communication, clear work organisation and well-defined work contents and goals, opportunities to develop expertise and other positive HR practices (Albrecht et al. 2015; Cheung 2014; Gruman & Saks 2011).

Relationship enhancement is a central feature of a positive organisation (Mroz & Quinn 2013), and important vocational education organisations, too. The reform necessitates extremely close collaboration with various networks (Minedu 2017). As in all workplaces, in VETs' organisations, too, collaboration and positive interaction are seen to enhance well-being at work, efficiency, productivity, commitment, and communal learning (Baker & Dutton 2007; Gittell, 2012; Gittell, Seidner & Wimbush 2010; Uusiautti 2016). In the school context, teacher collaboration has been noted to enhance students' performance as well (Reeves, Pun, & Chung 2017). Enthusiasm itself is social, contagious, and interactional by nature (Baker, Cross & Wooten 2003; Bakker et al. 2006; Geue 2018; Schippers & Hogenes 2011; Sekerka & Fredrickson 2013; Stairs& Galpin 2013; Owens et al. 2016; Wenström et al. 2018). Colloquial support considerably enhances work engagement in teachers (Bakker & Bal 2010; Lam et al. 2010; Salanova, Bakker & Llorens 2006).

Individual attributes refers to the appreciation of individual characteristics, differences and various strengths and abilities (Cheung 2014; Stairs & Galpin 2013). Work engagement specifically emerges from using individual strengths in daily work (Bakker & Demerouti 2014). Likewise, for organisations, it is important to utilise the whole strength potential of the members of the organisation (Stairs & Galpin 2013). Focus on strengths and abilities makes it possible to maintain work engagement and enthusiasm under extrinsic pressure and demands for change (Bakker & Demerouti 2014; Biswas-Diener, Kashdan & Minhas 2011) because it supports the sense of meaning at work (Stairs & Galpin 2013; Steger & Dik 2010; Uusiautti 2016).

Deviant leadership enables the other elements of PRIDE, because leaders and supervisors have the chance to influence organisational practices and resources (Gruman & Saks 2011; Harter & Blacksmith 2013; Stairs & Galpin 2013). Positive leadership promotes positive interaction and collaboration and is, at its best, focused on the employment and development of various strengths and resources (Biswas-Diener et al. 2011; Cheung 2014; Geue 2018; Oades et al. 2011). Positive leadership is caring and participatory, and pays attention to emotions (Cheung 2014, Richardson & West 2013). Positive leadership is the leadership of positive atmosphere, relationships, interaction, and meaning (Cameron 2012; Oades et al. 2011).

Emotional well-being comprises the organisational atmosphere and positive emotions (Cheung 2014; see also Stairs & Galpin 2013). Enthusiastic employees can positively affect the whole work environment and atmosphere (Mroz & Quinn 2013), whereas positive work environment supports individual flourishing and work engagement (Geue 2018; Davis 2013). Work engagement and enthusiasm are related to various positive emotions that can also support coping in stressful situations of changing work (Bakker & Demerouti 2014; Fredrickson & Joiner 2002; Ong, Bergeman, Bisconti & Wallace 2006).

Method

The research question set for this research was as follows:

How does the PRIDE theory describe leadership and organisation that enhances vocational education teachers' (VET) enthusiasm?

This was qualitative research, seeking to hear the VETs themselves (Cozby & Bates 2012; Creswell 2014; Ince et al. 2016). In work and organisational research, these kinds of studies want to understand better how people think, feel, and behave at work, and how it can be used to research on motivation, well-being at work, leadership, and organisational change and development (Doldor, Silvester & Atewologun 2017).

VETs who defined themselves enthusiastic about their work were recruited in this research. This kind of selection of participants resembles purposeful selection, which means that people who are considered to best provide answers to the research question are recruited as the research participants (Creswell 2014; Galletta 2012). This also means that the group of research participants was carefully chosen. An email was sent to Finnish VETs through their networks. Teachers were also approached via social network sites. The recipients were also asked to forward the email to their networks.

Altogether 15 Finnish VETs (11 women and 4 men) participated in the research. They represented six (of 96) vocational education institutions across Finland, 13 different educational units or teams and 11 different vocational fields. VETs were 40-60 years old and had worked as teachers from four to over 30 years. The interviews were conducted in May and April 2018. The interviews lasted from about 30 minutes to 1.5 hours. In this article, the teachers are referred with codes T1-T15.

The interview method was a semi-structured interview (Galletta 2012) that followed the elements of PRIDE (Cheung 2014; Galletta 2012; Hshiesh & Shannon 2005). First, VETs were asked to freely describe their work and factors they found inspiring in it (Galletta 2012). After that, they were asked more specific questions related to the elements of PRIDE. For example, they were asked to describe positive practices by asking "Could you describe such practices or methods that enhance your enthusiasm at work?" Or, when it came to relationship enhancement, they were to answer the question of "How does the interaction and collaboration in your workplace influence your enthusiasm?" Finally, VETs were given the opportunity to talk about something they found important to the theme (Galletta 2012). Despite the theory-based approach in the interview, the main focus was on experiences the VETs brought up, which allowed new meanings and interpretations to emerge during interviews (Galletta 2012).

The interview data were analysed with the qualitative content analysing method. The theory-led analysis is useful when the existing theory needs to be complemented, extended, or validated (Hshiesh & Shannon 2005). In the first phase, each interview was categorised into the five elements of PRIDE (Basit 2003; Hshiesh & Shannon 2005). After that, sub-categories were created and specified under each main category. The sub-categories were data-based. For example, one of the sub-categories of positive practices was "practices enhancing collaboration and interaction".

When it comes to the reliability of the research, it is important to analyse how the interview situations might have affected the data. Did the interviewees genuinely talk about reality, or were the descriptions of enthusiasm merely products of the interview situation (Creswell 2014; Peräkylä 2011)? Qualitative interviews are always created through interaction, in which the researcher is the active partner, and also determines the sequence of the interview unconsciously (Creswell 2014; Galletta 2012). Therefore, it is important that the researcher's prejudices and assumptions are openly reflected (Creswell & Miller 2000). In this research, the interviewee had wide experience in teaching in vocational education but also profound knowledge of theory and research in the field. However, theory-led content analysis is seen to benefit from expertise and knowledge about the research theme (Hshiesh & Shannon 2005).

Another critical aspect is whether the data were sufficient. In qualitative research, the quality of data is more important than quantity (Francis et al. 2010). One way of evaluating the saturation of data is to

assess whether after conducting 10 interviews, three new interviews would not provide new contents (Francis et al. 2010). The data in this research covered 15 interviews. After analysing the first ten, interviews number 11 and 13 provided some new specifications to sub-categories of analysis, but interviews 12, 14, and 15 did not produce new information. Therefore, this criterion was fulfilled (Francis et al. 2010).

Participation in this research was voluntary and confidential. Because interviewees were directly addressed via emails and social network sites, no one except the researcher knows from which vocational education institutions the participants come. This protects the anonymity of the research participants.

Results

Positive practices

According to the data, positive practices that enhanced VETs' enthusiasm at work were concrete actions, structures, and processes that also supported the elements of PRIDE. The positive practices could be categorised into practices enhancing (1) development of work and professional growth; (2) interaction and collaboration; and (3) efficient and quality pedagogical work.

Practices enhancing development of work and professional growth included various developmental teams projects that VETs regarded as enabling working with like-minded people who were interested in the same things. Partly these teams and projects were seen as means to enhance careers too because they provided a way of seizing new challenges and expanding one's own work contents.

"- - this project. I mean I just found those people after seven years who are the ones thinking in the same way."(T7)

"I think it is always a sign of a good organisation if it can provide challenges. So you do not have to look for them outside your workplace." (T1)

Main practices enhancing positive interaction and collaboration were team meetings that made it possible for VETs to develop together and share knowledge. Also smaller everyday practices, such as common coffee breaks, or how the offices were arranged, were mentioned as important factors promoting collaboration and innovative work approach. In all, VETs seemed to need informal opportunities to colloquial conversations in addition to formal meetings. New collaboration methods such as innovative core teams or voluntary theme groups were appreciated among VETs.

"We have simultaneously some mentoring and we can discuss our everyday work, what it really is." (T4)

"We have this coffee room there where everyone goes to have coffee. So that helps. You can see the principal and other teachers and leaders at the same time." (T6)

Practices enhancing quality pedagogical action were the opportunity to use positive pedagogy, team learning, work-based learning, and teachers' freedom to plan their own work in general. However, VETs also mentioned that they appreciated well-organised work and functional processes that made it possible for them to focus on their core pedagogical task and use creativity at work. On the other hand, stiff, hierarchical structures and bureaucracy decreased VETs' enthusiasm at work.

"If the practices are something like I have experienced, that you have literally a guide book that states with three sentences that this is how to work, and this lego goes here. It cannot be changed. That destroys all creativity, it destroys all motivation. " (T5)

Relationship enhancement

When it came to the element of relationship enhancement, VETs emphasised positive energy networks and becoming enthusiastic together as well as colloquial support. Specifically emotional support and practical helping at work were regarded as factors that supported enthusiasm. Furthermore, VETs

described positive collaboration and related conditions of enthusiasm, such as trust, appreciation, responsibility, and openness as well as close relationships between colleagues that surpassed their professional roles.

Positive interaction was described as the basis of enthusiasm. According to VETs, their enthusiasm emerged and strengthened first and foremost in interaction with other people. Enthusiastic teachers reported that they tended to interact actively and participate in networking also beyond their own units or organisations.

"Interaction, it certainly feeds it. - - Having someone to share your enthusiasm or the experience in general. Of course, it strengthens your feeling and takes you again further." (T10)

Similarly, colloquial support was important to VETs' enthusiasm. At its best, teachers were sharing their opinions and feelings about issues or situations (e.g. challenging encounters with students) they had faced.

"We have not needed any outside mentoring. It has been enough to be able to chat together. Quite often after work, we have had little moments to talk about our days." (T4)

One important ingredient of positive interaction and collaboration was familiarisation with others. VETs considered it important to have informal encounters with their colleagues outside work. Long-term co-workers usually knew each other well also in their personal lives. Informal relationships were seen therefore crucial to better interaction and understanding about everyone's way of working.

"Our own group. We have grown together naturally because we are dealing with each other daily. And in this sense our relationships have improved interaction-wise because we have learned to know each other and our ways of reacting and take things." (T1)

Individual attributes

Organisation and leadership that enable enthusiasm in teachers are based on individual attributes and strengths. In the interview data, themes related to this element of PRIDE were (1) personal development and opportunity develop work; (2) expertise usage and sharing; (3) sense of meaning at work. From the organisation, VETs expected (4) employment of strengths and (5) appreciation, trust, and autonomy.

VETs were enthusiastic about learning new and developing their work, their expertise, and themselves. Therefore, they also expected that their work would offer them change and new challenges that would maintain their enthusiasm. VETs also experienced a strong sense of expertise, that they considered important to share with each other and to learn from each other.

"I am a little crazy about indulging into new things. Being able to do something new, develop it. - - For example, if they said that let us do this for the next two years or let us work like this for the year, that is not my thing. I need it to change, develop and live, and it needs to have those new elements." (T12)

In addition, VETs described the sense of meaning at work. It was often related to one's own strong values and willingness to influence on matters important to oneself. The sense of meaning could be strengthened by appreciation and positive feedback. However, VETs reported that they received feedback mostly from students and other partners, rather than from their own organisation.

"I have these main principles of why I work with students. They will become good professionals and they know this job and they know themselves, have the knowledge of heart. Then I am able to lay down and sleep well." (T9)

VETs expected from their organisations that their strengths would be better noticed and employed at work. They realised that in order to fully keep up with the reform of vocational education, also VETs' strengths should be actively recognised.

"I think that we are increasingly going toward productivity, what is left below the line. - - To use core expertise and let those people really do who have the ability to do it." (T2)

By focusing on individual attributes, VETs would have more autonomy at work, freedom to plan their teaching based on their strengths. This was considered a way of showing appreciation and trust by the organisation, too. However, also concrete rewards were also considered important elements of showing appreciation and increasing VETs' enthusiasm.

"So that not all work becomes too specified and maybe too limited." (T1)

"And that collaboration with work life. I have noticed that it is somehow really natural and easy for me and I feel that I get really much from it. So, that is something that I hope that would be noticed in that feedback. - - That is something I have been thinking about, that if your organisation does not react to it, it can really quickly make you cynical: 'why would I bother anymore?'" (T1)

Deviant leadership

Leadership and supervision were also seen crucial for enthusiasm: "That is the alpha and omega of it." (T5) From the data, four categories could be seen to describe this element of PRIDE: (1) leading daily work; (2) leading teacher enthusiasm; (3) leading strengths and potentials; and (4) leading emotions and work atmosphere.

Leaders' and supervisors' abilities to lead daily work were seen to be based on their interest in and understanding about VETs' professional fields and work. VETs appreciated their supervisors concrete experience of the field they were teaching, which made it possible to look for support from the supervisor if needed. Also the ability to provide feedback, encourage, and notice successes enhanced VETs' enthusiasm.

"The supervisor knows how this is, has been teaching too. The supervisor is a professional and has been actually working and therefore knows." (T13)

"If the management does not understand that their support is important to followers, we are lost. It is really important that the leaders appreciate each employee's effort and provide feedback on it." T6)

Enabling, renewing, and open-minded leadership was the key to leading enthusiasm, according to the VETs' opinion. They considered this kind of leadership also following the reform and making it possible to develop learning environments and pedagogy, and design innovative experiments and practices in vocational education. The reform could provide teachers with opportunities that necessitated supervisors "the courage, and when having more resources, giving them to us." (T2) Leaders can set the example of enthusiasm, too: "The supervisor is as if filled with energy and enthusiasm and new ideas like this." (T11)

VETs considered it important that leaders and supervisors employed strength-based approaches in leadership. They were expected to recognise VETs' potential, help them develop, and encourage toward professional growth and progress. According to VETs, this did not only strengthen their enthusiasm at work but commitment to the organisation too.

"Everyone is an individual and everyone has to be led in a way the person is." (T8)

"To lead so that this employee gets a chance to flourish in those areas that he or she finds motivating and strong for him or her." (T5)

"If I was a supervisor, I would be hearing it sensitively and also challenging by asking whether the employee wants to develop himself or the work and in which direction." (T1)

Those leaders and supervisors who were empathetic and people-oriented were regarded as able to lead emotions and the atmosphere at the workplace. This was shown in practice as the ability to discuss issues when sensing something was wrong, and to recognise and identity feelings at the workplace. Mainly, VETs found their own supervisors emotionally intelligent and easy to approach. However, it was evident in the interview data that supervisors could have quite different ways of working even within the same organisation.

"Whenever needed, the supervisor intervenes. And listens. - - So, quite magnificently can handle these kinds of things without blaming anybody, but by discussing." (T4)

"You can see different leadership styles in our organisation. - - We have some department heads whose departments have totally different atmosphere, which is also visible outside." (T10)

Emotional well-being

The fifth element of PRIDE is emotional well-being, that according to Cheung's (2014) definition covers mental and physical well-being and positive emotions. In the data, three categories could be found to describe this element of PRIDE from the perspective of VETs' enthusiasm: (1) changes at work and related feelings of insecurity and being unaware; (2) atmosphere and its meaning in general; and (3) resources and coping at work.

VETs mainly described the change due to the present reform, and how it influenced their enthusiasm, well-being, and atmosphere at work. The reform had changed organisational structures and facilities that all changed daily work. In addition, the change in pedagogy was seen as burdening. All the feelings of uncertainty decreased VETs' enthusiasm.

"When you think about that teacher, we do have such unstable times that how can you become enthusiastic now." (T3)

Constant pressures to cut costs and lay off employees had a negative influence on atmosphere at work and caused stress. These also directly seemed to decrease VETs' enthusiasm.

"To have such huge national cuts in education and having all news telling how many VETs are unemployed and which organisation will lay off people next, it certainly creates a certain basic atmosphere." (T10)

"You can say that the atmosphere is even contradictory. The basic feeling of security that comes from having a permanent employment and related future views has been shaken for quite many of us." (T10)

Discussion

As the results showed, VETs were able to name factors related to all elements of PRIDE that influenced their enthusiasm at work. Based on the findings, PRIDE theory can be used for describing enthusiasm in VETs, because there were not any themes or categories that did not fit in the categories formed based on PRIDE. However, the original PRIDE is a quantitative index, developed in a different type of workplace and culture. Sub-categories formed in this research can be seen as professional specific elements of enthusiasm in VETs during the ongoing reform of vocational education (see also Bakker 2017).

The research also increased understanding about the dynamics of PRIDE: its elements are not equal, but it seemed in the context of vocational education that leadership influenced all categories, practices enhanced other categories, and various expectations could be set at leadership. Table 1 gives a summary of findings of how positive organisation and leadership can enable enthusiasm in teachers.

Table 1. Elements of PRIDE and VETs' enthusiasm

Element of PRIDE	Categories of Enthusiasm
POSITIVE PRACTICES	Practices enhancing development of work and professional growth
	Practices enhancing interaction and collaboration
	Practices enhancing efficient and quality pedagogical work
RELATIONSHIP ENHANCEMENT	Inspiring people and shared enthusiasm
	Colloquial support
	Enabled collaboration
INDIVIDUAL ATTRIBUTES	Personal development and opportunity develop work
	Expertise usage and sharing
	Sense of meaning at work
	Employment of strengths
	Appreciation, trust, and autonomy
DEVIANT LEADERSHIP	Leading the daily work
	Leading teacher enthusiasm
	Leading strengths and potentials
	Leading emotions and work atmosphere
EMOTIONAL WELLBEING	Change-related emotions
	Emotional atmosphere at workplace
	Sufficiency of resources

When analysing the findings, it seemed evident that the elements of PRIDE were overlapping and reciprocal when viewed from the perspective of VETs' enthusiasm. Three themes appeared common to the elements of PRIDE in the data of this research, that can be named as the features of an organisation enhancing employee enthusiasm. Consequently, the following themes are not just based on VETs' perceptions but can be seen merely as the keys to enhance enthusiasm (cf., Meyer 2017):

(1) Opportunities for self-development and development of work,

(2) recognition and employment of strengths and potential, and

(3) enhancement of positive interaction and collaboration.

The original PRIDE (Cheung 2014) and the findings of this research differed from each other to some extent. For example, individual attributes in PRIDE cover widely the topic of employing characteristic strengths. Some strengths could be seen in this research data, too, such as creativity and optimism, but in this research, sub-categories to each element of PRIDE were formed in a data based manner. Likewise, the element of leadership was, in Cheung's (2014) index, the narrowest when compared to the other elements of PRIDE. However, our research brought up the significance of leadership more widely. It is also noteworthy that PRIDE was designed to measure positivity in an organisation and was to be used as a tool for a specific organisation in the field of social work (Cheung 2014). Based on our findings, PRIDE could be adopted in many kinds of institutions: here, we have highlighted themes important to enthusiasm in vocational education institutions.

The themes support the findings of earlier research on VETs' enthusiasm (see Wenström et al. 2018). The conclusion is that enthusiasm can be enhanced and enabled through positive leadership and organisation of work. Positive organisation of work means "generative dynamics in and of organisations that enable individuals, groups, and organizations as a whole to flourish" (Fredrickson & Dutton 2008). Furthermore, the findings showed that, as earlier studies have suggested (e.g., Bakker & Demerouti 2014; Bakker, Van Veldhoven & Xanthopoulou 2010; Harter & Blacksmith 2013; Wenström et al. 2018), the opportunity to develop work and professional growth is an important factor of enthusiasm. Likewise, lack of these opportunities can lead to desire to change workplace (Harter & Blacksmith 2013). This was also brought up by the research participants in this research, and emphasised development opportunities at the levels of practices, individual potentials, and leadership.

Secondly, this research supported the notion that the recognition and use of strengths have gained only little attention in education institutions (see also Bloom et al. 2015; Harter & Blacksmith 2013). Finnish studies suggest that our vocational education institutions do not possess means to notice top performances or strengthen top workers' engagement (Jokinen, Sieppi & Maliranta 2018). One reason might be that in education, work tasks have never before been designed according to teachers' strengths (cf., Bakker & Demerouti 2014: Mroz & Quinn 2013) nor have teachers been expected to advance in their careers (e.g. Bubb 2005). However, this research showed that enthusiastic VETs expect to have opportunities to expand their work contents, and to advance their careers within their own organisations. Best opportunities for this kind of usage of strengths were provided by various teamwork, projects, and networks.

According to the findings, enthusiasm emerges and strengthens in positive interaction. Indeed, collaboration can lead to a shared meaningful engagement and sense of energizing work (see Baker et al. 2003; Bakker et al. 2006; Geue 2018; Schippers & Hogenes 2011; Sekerka & Fredrickson 2013; Stairs & Galpin 2013; Owens et al. 2016; Wenström et al. 2018). Enthusiastic VETs actively sought opportunities to work in positive energy networks (Baker et al. 2003; see also Gittell 2013; Owens et al. 2016). Moreover, the elements of enthusiasm reported in findings seemed to correspond to the requirements set for VETs in the educational reform: they are expected to work in a more collaborative, developing, and networking manner. Therefore, it would be crucial to pay attention to the development of flexible structures, practices, and organisation of work that would enhance interaction and collaboration in vocational education institutions (Baker & Dutton 2007; Geue 2018; Reeves et al. 2017).

Positive leadership that enhances enthusiasm in VETs covered task support and emotional and relationship support (see also Cheung & Wong 2011). In addition, positive leadership was expected to include managing of engagement and talent identification (Harter & Blacksmith 2013). Although enthusiastic employees have been found to maintain and strengthen their own resources and engagement to some extent (Bakker & Demerouti 2014) and develop self-feedback systems (Albrecht et al. 2015), this study showed that even enthusiastic VETs longed for feedback, appreciation, and rewards from successes from leaders and supervisors.

The reform of vocational education, not itself but the related cuts and lays-off, significantly seemed to decrease VETs' enthusiasm. The reform creates opportunities to use creativity and focus on strengths but also sets challenges that threaten teachers' enthusiasm and well-being at work (see also Day 2002; Vähäsantanen & Eteläpelto 2011).

Conclusion

In educational institutions, analysis of leadership is especially significant because it also influences pedagogical work and students' performance (Bloom et al. 2015; Coelli & Green 2012; Heck & Hallinger 2010; Leithwood et al. 2008). And yet, the quality of leadership practices has been noted to vary more in schools than other work fields (Bloom et al. 2015). Indeed, human resource management is the weakest area of educational leadership internationally (Bloom et al. 2015; Jokinen et al. 2018). Positive leadership can be crucial to for example employee well-being (Kuoppala, Lamminpää, Liira & Vainio 2008; Salmi, Perttula & Syväjärvi 2014; Skakon, Nielsen, Borg & Guzman 2010). In addition to

well-being, good leader-follower interaction (Hulpia & Devos 2010; Shier & Graham 2011) and support from leaders and supervisors (Bakker et al. 2006) are important to enthusiasm and work engagement.

This research showed that the elements of PRIDE can be used for analysing how VETs perceive their enthusiasm at work, and thus expands the theory into new fields and perspectives. For example, instead of quantitative information, it is useful for research of human experiences and perceptions. The elements of PRIDE seemed interconnected and yet possible to view separately, too. This research provided further understanding about the concept and dynamics of positive organisations from the employees' perspective. Equally important was to point out how enthusiasm: as meaningful a resource it is, is inadequately noticed, recognised, and led in educational organisations (Owens et al. 2016; Saks 2017) According to this research, VETs' enthusiasm was best enabled by such positive leadership and organisation that supported development, paid attention to teachers' strengths, and promoted positive interaction and collaboration. Therefore, positive leadership and organisation make an important well-being factor (e.g., Salmi et al. 2014). Furthermore, by consciously leading enthusiasm, it is possible to support the development of teaching that is pursued by the reform of vocational education. This will enhance the quality and efficiency of education as well as teachers' ability to face and cope with the change. Enthusiastic, positive teachers are active agents of change (see also Lam et al. 2010; Macey & Schneider 2008)! It would be important to connect factors promoting enthusiasm to the organizational strategies, processes, and systems (Albrecht et al. 2015; Guest 2014; Saks 2017; see also Thompson et al. 2015).

Educational organisations, as they are so massive, stiff, and hierarchical, may find leading enthusiasm challenging, because rigid structures are the main destroyers of creativity, innovation, and work engagement in teachers (Gittell 2012; Saks 2017). Therefore, it would be reasonable to critically evaluate the benefits of cuts and centralisation of educational units if these actions limit the conditions of enthusiasm (see also Day 2002). Moreover, as vocational educational teaching is changing, it should be discussed whether each teacher is expected to expand their expertise into new areas by developing their weaknesses, or whether they are provided with opportunities to better utilise their strengths and potential in collaborative teams and networks? When re-designing jobs (see also Bakker & Demerouti 2014), would it be possible to do individually tailored work contents that would focus, for example, on student supervision and guidance, special needs support, or collaboration with workplaces in a way that would form core teams that are based on teachers' and other personnel's strengths and interests?

In this research, leadership and organisations were viewed from the perspective of VETs' enthusiasm. Because the core of positive organisations is leadership, the next step would be to analyse leaders' and supervisors' viewpoints of leadership that enhances VETs' enthusiasm (see also Coelli & Green 2012). Hearing just teachers' perspectives does not provide the full picture. Likewise, the PRIDE theory would need further testing and validating in Finnish education institutions, to determine what kind of relation there is between the positive organisational index and quality and effectiveness scores of Finnish vocational education. This research provided a fresh, functional way of analysing enthusiasm in vocational education teachers. The core features of positive organisations and leadership highlighted here are hopefully useful and concrete tools to Finnish and international organisers of vocational education when considering the new educational arrangements and pursuing securing VETs' work engagement and well-being at work.

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