

About creating a co-creation network

How can small and medium-sized businesses form strategic alliances for digitalization and growth?

Whitepaper, by Assoc. prof. Niels F. Garmann-Johnsen, Prof. Tom Roar Eikebrokk and Prof. Dag H. Olsen, all University of Agder (UiA), version Nov. 2021.

Summary/Introduction: This is an article that is partly a popular scientific excerpt of the two information system science articles "Co-creation in networks of SMEs: a conceptual model of the co-creation process"¹ and "The Co-creation Canvas"². It also highlights potential topics for future alliance leaders to familiarize themselves with, and introduces VOIL – Virtual Open Innovation Lab, a platform for self-guided learning on digital transformation.

Why co-create?

The background for this article is the changes in the business sector that digital change of society causes, and a concern about the future opportunities for the small and medium-sized enterprises that form the "growth layer", the undergrowth and the largest part of most countries' economies. Most companies are used to competing with companies that are much like themselves. But digital change means that competition can come from new entrants outside the well-known market areas, with new ways of creating value for customers (and making money) that are radically different from the established industries.

New digital players challenge value chains and transform industries directly and indirectly. Digital platform companies connect suppliers and users of goods and services in new ways and change the patterns of value creation and market control along the way. Without awareness of the changes, 'analog' actors may risk being outperformed.

How to co-create?

SMEs can acquire and leverage resources for growth, change and the power of digital technology through strategic alliances with other small and medium-sized businesses or competitors, with larger companies, governments, or academia (e.g., with the help of student trainees). The resources that can be acquired in this way may include:

- Competence (competence in technologies and abilities for economics and management)
- Capacity for growth, more rational processes, and economies of scale
- New digital capabilities, such as workforces trained to work with hardware and software platforms
- Access to key customers and markets
- Funding and economics, including expertise in utilization of policy instruments and support schemes for research, development, and Innovation

The list is not exhaustive. By forming partnerships and accessing such resources, SMEs can hope to compete on better terms, ensuring survival and further growth (see also Figure 1-3). But there may be barriers to the successful establishment of strategic alliances.

¹ Eikebrokk, T. R., Garmann-Johnsen, N. F. and Olsen, D. H., 2021. Co-creation in networks of Small and Medium-sized Enterprises: a conceptual model of the co-creation process. *Procedia Informatics*, 181, p.360-366.

² Garmann-Johnsen, N. F., Olsen, D.H. and Eikebrokk, T.R., 2021. Co-creation Canvas. *Procedia Informatics*, 181, p.189-197.

Barriers to successful co-creation, and how to overcome them

Forming partnerships, e.g., with other companies, comes with its own potential pitfalls. Fear of loss of autonomy, or IPR, – Intellectual property rights, may be among the most important concerns for many SME leaders. The desire for autonomy and independence may be the very reason why the business was established in the first place. The company can be family owned and have a brand name with a history that the owners or managers may want to maintain. While the benefits of entering a strategic partnership for digital change and growth outweigh the drawbacks, remaining concerns about SMEs may be how to allocate risk and future revenues and get the right corporate governance for the partnership in place.

Changes in framework conditions and markets usually lead to the conclusion that they both require significant changes, but that they also open new opportunities. An SME business leader thus focuses on the possibilities of renewing the company's products and services to increase their value for customers, and thus the competitiveness of the company. Along with the recognition of renewal, the question is how best to make this happen. The manager is often aware that developing a new product/service concept requires resources that are not available and thus outside help through a strategic partnership with other companies. This sounds simple, but in practice it is challenging. How should the leader proceed to form a strategic alliance that can support such business development and innovation? And, how to get partners interested and willing to participate?

Based on literature reviews and their own research, the authors of this article have tried to answer questions and demonstrate a conceptual model for a process where different questions and possibilities can be addressed, and addressed, one step at a time (see Figure 1).

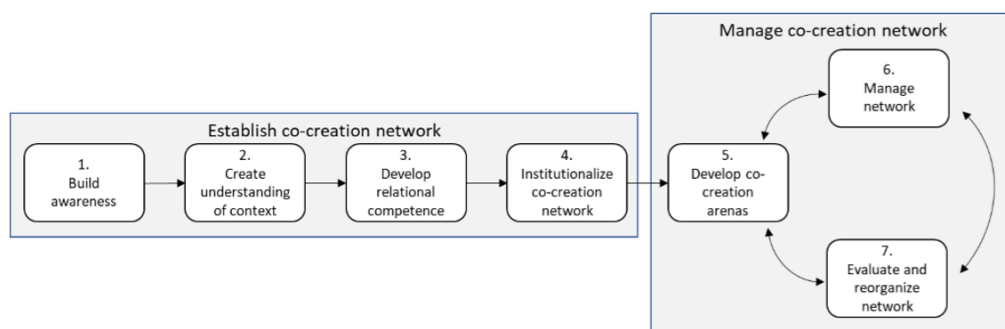


Figure 1 Co-creation process model.

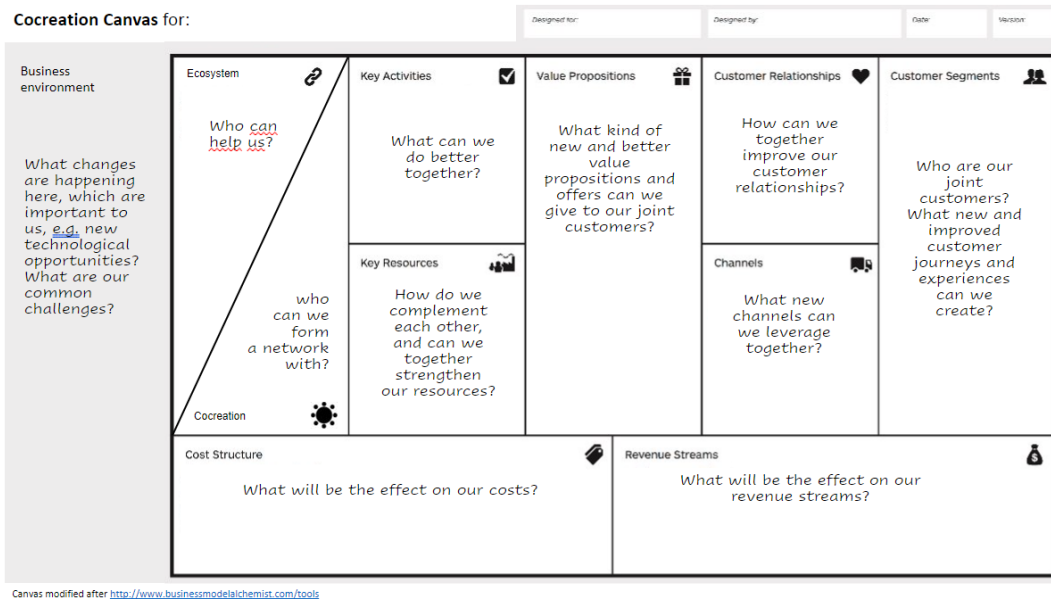


Figure 2 A canvas with key questions to answer in the process of establishing a co-creation network, cf. Figure 1.

1. Build awareness

The process can be initiated by a single company that performs a strategic process or SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) or other types of methods for mapping their assets and resources. There may also be a social process involving representatives from several companies, in meeting places facilitated by a "reliable third party"; industrial clusters or chambers of commerce, academia and community laboratories, or the public policy instruments. The product of this can also be a common understanding of common threats and opportunities involving multiple companies.

This common consciousness can include an overview of untapped opportunities and underutilized resources and competencies in each company, which can complement each other. A tool to make use of this and subsequent steps in the process of establishing a co-creation network is illustrated in Figure 2 (see also the example in Figure 4).

2. Create an understanding of context

To create a common understanding of changes in framework conditions and market; the context under which – now consciously – companies work underneath, a common reality picture must be developed. To create such an image of the market and competition, an understanding of the term can; disruptive, asymmetric competition may be required. In his book "The Digital Transformation Playbook", David Rogers has³ defined asymmetric competition as actors with a radical new value proposition, which partially competes with SMEs in some market areas, but not in others. An example here is Amazon books, a competitor to both traditional publishers and bookstore chains. They also offer authors a self-publishing service, which includes a "short circuit" of traditional publishing services. Another strategy used by the new digital market players, according to Rogers, is intermediation, where a new service establishes itself between suppliers and customers. An example here is OTAs, online travel agencies ("travel agencies"), such as Momondo, Hotels.com etc., which provide hotel accommodation, and flights, thus providing customers to these other players (hotels, airlines), but also taking a significant share of the total price and value created. Jon Iden og Bendik In

³ Rogers, D. L., 2016. The digital transformation playbook: Rethink your business for the digital age. Columbia University Press.

an article, Bygstad has⁴ shown how a Nordic hotel chain (choice chain) started competing against international OTAs, through its own reward system. We will find such a platformization;⁵ asymmetric or intermediate players, in both downstream and upstream (business-to-business – B2B) markets. Iden and Bygstad's article show examples of possible countermoves.

By mapping the value chain, such threats can be uncovered. Rogers proposes the concept of value train lanes, "value-train", instead of value chains, to illustrate that in the digitized economy there may be several *alternative lines* between product and service manufacturers, and consumers. An emerging alliance of small and medium-sized enterprises can brainstorm where asymmetric competition or re-dissemination that can lower returns can occur, or already exists, and perhaps design countermeasures. Thus, they can retain control over their markets, e.g., by establishing their own common digital platform⁶.

3. Develop relational competence

Participants in a co-creation network and emerging partnership or alliance must invest in the common social environment, to create trust and promote the idea that investing, sharing ideas and generous behavior in such alliances will ultimately pay off for their own company. On the other hand, it is important not to expect a calculated return, as there may be a significant lag in time between an investment in co-creation activities and return on investment.

Building on positive experiences from previous alliance projects can promote the credibility of the benefits of new business partnerships. Participation of the public sector (potentially also by the public sector contributing project funding), industrial clusters and corporate networks, together with academia and student resources, can strengthen efforts to create successful partnerships for digitalization.

4. Institutionalization of co-creation networks, and the way forward

At some point, the alliance must be confirmed through the institutionalization of it. In connection with formalizing it, a common management and plan for the implementation of the first common sufficiently viable⁷ product (i.e., with a sufficient degree of innovation and quality) must be developed, ref. Figure 1 – steps 5-7 (developing arenas, managing networks and evaluating / reorganizing networks if needed). A sufficiently viable product (in the innovation literature⁸ called "Minimum Viable Product", MVP) is a version of a concept, product, or service with just enough features to be used by early customers who can then provide feedback for future (or continuous) concept and product development.

An innovation, in the form of a new product or service can be designed in many ways. Design Thinking – market research methods can be used to map market needs (customer segments⁹, considering that there may be several customer types, especially in B2B trading). Brainstorming workshops for idea development towards a new joint value proposition, which meets these needs

⁴ Bygstad, B., & Iden, J., 2017, November. Competing in digital infrastructures. How a Nordic hotel chain competes with the online travel agencies. In Norsk konferanse for organisasjoners bruk av IT (Vol. 25, No. 1).

⁵ Ref. e.g., Menzel, T., & Teubner, T., 2020. Green energy platform economics—understanding platformization and sustainabilization in the energy sector. *International Journal of Energy Sector Management*.

⁶ Ref. e.g., Hydle, K., Hanseth, O., Aanestad, M., & Aas, T. H., 2021, January. Digital Transformation through Collaborative Platformization: A Study of Incumbent-Entrepreneur Relations. In *Proceedings of the 54th Hawaii International Conference on System Sciences* (p. 5831).

⁷ Lewrick, M., Link, P., & Leifer, L., 2018. *The design thinking playbook: Mindful digital transformation of teams, products, services, businesses, and ecosystems*. John Wiley & Sons.

⁸ Ries, E., 2011. *The lean startup*. New York: Crown Business.

⁹ Lewrick et al, 2018 (Op.cit.).

are part of the same design methodology. Canvases (canvases), structured models with central questions (cf. Figure 2) are a well-known technique used in such business development. Together, this article's authors have prepared a canvas that participants can use to analyze role models/examples (the authors have reproduced some examples in the article, such as Figures 4 and 5) or competitors, and map/develop a new, common business model. The canvas is based on Osterwalder's well-known and widely used business model canvas¹⁰, but with that distinction, that the element "Key partners" is nuanced in the eco-system from which the strategic alliance is a part and may need system resources, e.g., central ICT platforms and standards, and the alliance itself for co-creation. This brings us to the question of how we as SME acquire a co-creation network, a sufficiently good collaboration between suitable players to create an innovation that is good enough in the market? The innovation literature refers to such co-creation networks as ("Minimum Viable Ecosystem", MVE). How to design the MVE concept is described in the book "The Design Thinking Playbook - Mindful Digital Transformation ..." by Michael Lewrick, Patrick Link and Larry Leifer¹¹. One thing to consider here is that a certain equality in the size and background of companies is an advantage when building trust in an alliance.

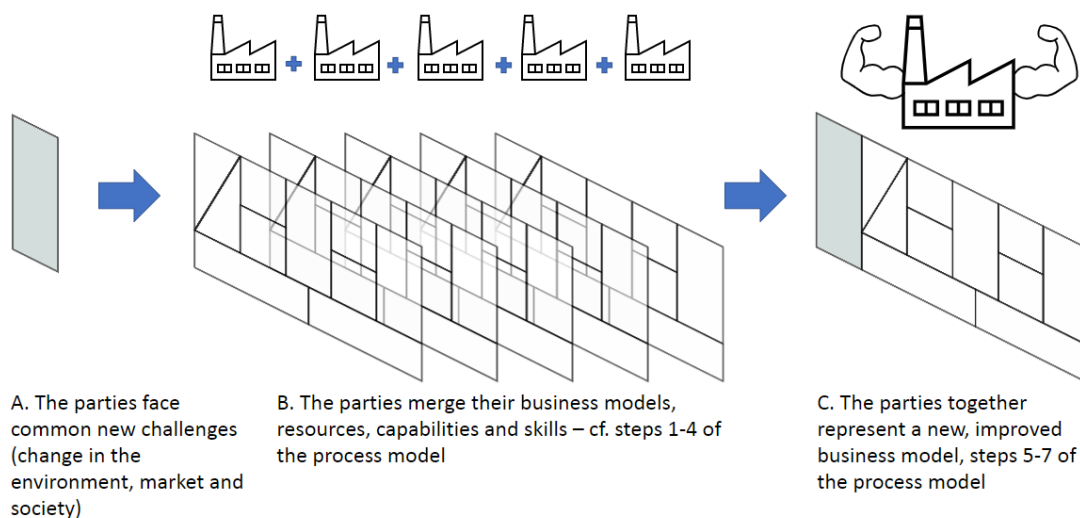


Figure 3 The co-creation process with the merging of business models, visualized, cf. Figures 1 and 2.

¹⁰ Osterwalder, A., Pigneur, Y., Oliveira, M. A.-Y., & Ferreira, J. J. P., 2011. Business Model Generation: A handbook for visionaries, game changers and challengers. (Wiley).

¹¹ Lewrick et al, 2018 (Op.cit.), p. 240-253.

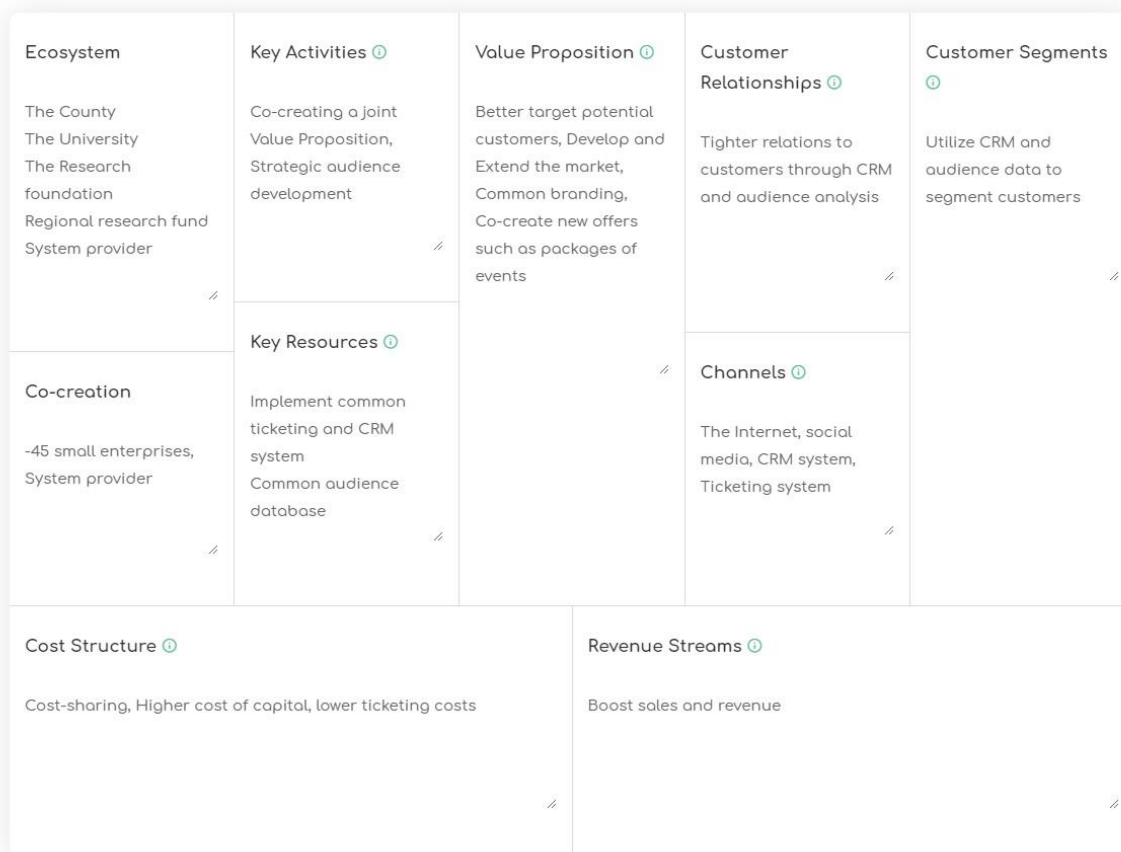


Figure 4 An example of the co-creation canvas – filled with a case from creative industries such as the theater and event industry, collaborating to develop a common Customer Relationship Management (CRM) customer follow-up system and e-ticket sales system.¹²

¹² Eikebrokk T. R., Lind E., and Olsen D. H., 2018. Digital Transformation in Small and Micro-Sized Firms: A Case Study of a Performing Arts Cluster. In Norsk konferanse for organisasjoners bruk av IT 2018 Sep 17 (Vol. 26, No. 1).

Ecosystem Norwegian eHealth cluster Norwegian IT cluster Joint RnD Projects	Key Activities ⓘ Co-creating a joint Value Propositions	Value Proposition ⓘ A holistic product and service offer, complementary services: 4 companies: A Hospital bed producer, a 'smart' mattress (with sensors) producer IT company with monitoring services, and specialized cleaning services	Customer Relationships ⓘ Simplified Customer Relationship handling	Customer Segments ⓘ Local hospitals, local procurement officers and medical staff
Co-creation 4 companies: Med, tech and IT, geographical proximity, prior knowledge through cluster and joint crisis management	Key Resources ⓘ The different companies, specialties and production capacity		Channels ⓘ Coordinated deliveries, and follow up, servitization of package	
Cost Structure ⓘ Local hospitals, local procurement officers and medical staff		Revenue Streams ⓘ More steady revenue streams (servitization)		

Figure 5 Another example of co-creation - a product-oriented collaboration, from the health sector.¹³

Service design or process modeling with the aim of finding the intersection of what customers need and want, and what at the same time satisfies a jointly developed (new and better) standard of ethics and sustainability, as part of the new value proposition (made possible by technology), can be a unifying goal for groups of companies.

After mapping the business model and strategic requirements, new digital solutions that enable the new common business model and value proposition can be prototyped and tested, using e.g., laboratory resources from VOIL – Virtual Open Innovation Lab.

VOIL – the Virtual Open Innovation Lab

In 2018-19, UiA's Dept. for Information Systems and CeDiT research center-members, together with colleagues in the European Research Centers for Information Systems (ERCIS) network - took the initiative to form an international center of excellence for digital transformation in small- and medium-sized enterprises that serves as a hotbed for the formation of consortia and research and development projects.

¹³ A thank you to Tor Åge Fjukstad, head of department in the Norwegian Smart Care Cluster, for example!

One of the projects formed is the VOIL-Virtual Open Innovation Lab. This Erasmus-plus the project with 9 participants from different European countries, has helped develop a platform for digital competence¹⁴-evaluation and training, and sandbox development and testing of new technologies such as blockchain and artificial intelligence. It is open to both students and working life/enterprises. VOIL platform (see Figure 6) was launched in October 2021.

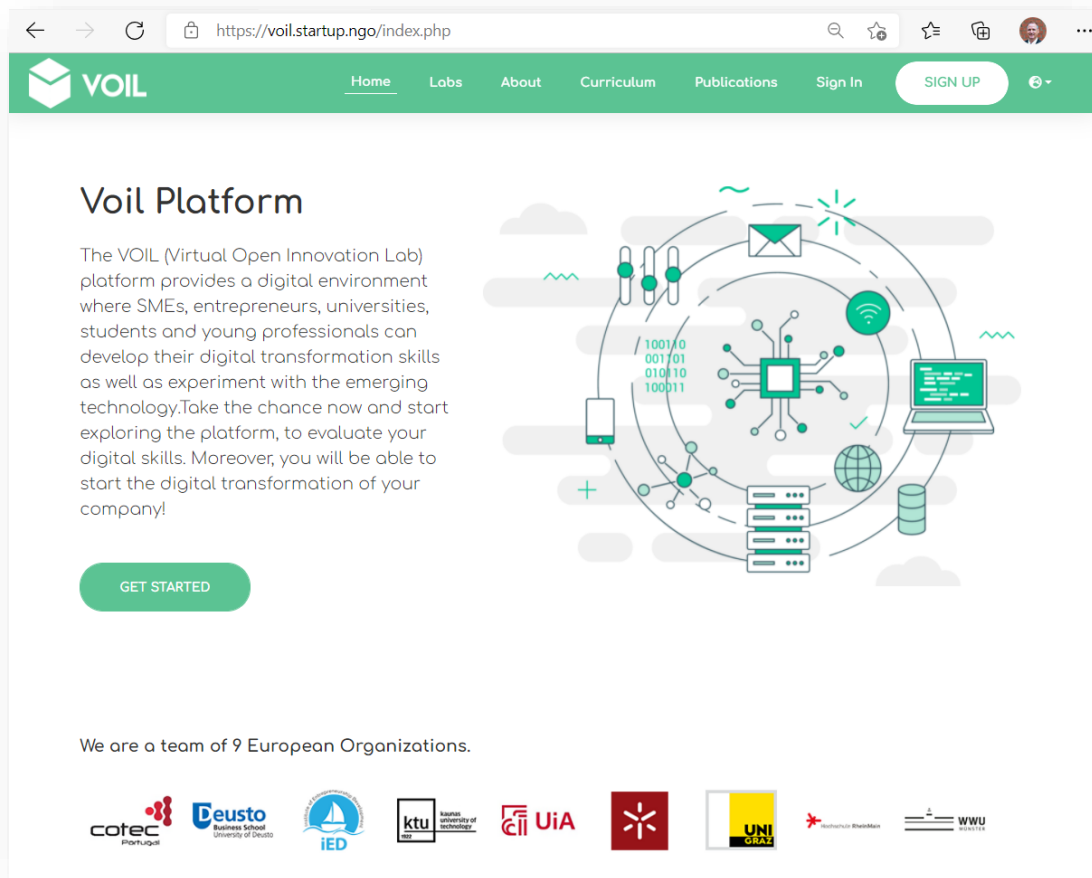


Figure 6 VOIL platform, facsimile (2021)

How to realize benefits from co-creation?

The biggest gains SMBs can make through co-creation are without much doubt, new capabilities, including the ability to attract, and retain, a workforce of digitally savvy entrepreneurs/innovators.

Good collaboration with your employees creates great benefits through agility, commitment, and efficiency. Co-operation and co-creation, with broad involvement of all employees in the company is typical of Norwegian and Nordic corporate culture and is referred to as the Nordic model.¹⁵ There are a number of good examples of what can be achieved with co-creation with employees¹⁶. Through co-

¹⁴See <https://www.voil.eu/> (Retrieved April 2021). The portal is launched as <https://voil.startup.ngo/>. About co-creation, see <https://voil.startup.ngo/labs/transformation-lab/co-creation> (requires registration, but it is free). The website is in English, and an automatic translation to other languages can be found (button in the top right corner).

¹⁵See e.g. <https://www.regjeringen.no/no/dokumenter/handbok-i-medarbeiderdrevet-innovasjon/id666818/> (visited April 2021).

¹⁶Garmann-Johnsen, N. F., Helmersen, M., and Eikebrokk, T. R., 2018. Worklife Ergonomics in Digital Co-Creation: The 'What', the 'Why' and the 'How'. European Journal of Workplace Innovation 2018; Volume 4. (1).

creation also towards other companies/organizations with interesting expertise in many areas, one can complement the overall competence, which gives all the members of the alliance new opportunities. VOIL – Virtual Open Innovation Lab, and the Co-creation and Transformation Lab in this one, can be a good toolbox that can help companies start co-creation and digital transformation, so that such gains can be more easily reaped.¹⁷

In addition to a larger unified workforce that can be mobilized for innovation and new development, a larger environment will be more viable in the long term and be more attractive as a workplace for candidates from academia, graduate students. Such an environment will also be able to quickly put such resources into the work processes of the participating companies, thereby getting started quickly with new developments. Many universities and colleges facilitate such student entrepreneurship. E.g., UiA, has created Kompetansetorget¹⁸ – where companies can get help with a project or a task in their business by creating bachelor's and master's theses-tasks. They can also register e-job advertisements at Kompetansetorget that are visible to UiA students, while at the same time allowing the students to publish their CV and possibly portfolio of projects, via the same portal.

¹⁷If you are interested in knowing more about this, have experience with similar processes, or would like to use these co-creation tools, please feel free to contact the article authors! Email, corresponding author:

niels.f.garmann-johnsen@uia.no .

¹⁸See <https://kompetansetorget.uia.no/arbeidsgiver> (accessed April 2021).