CODEC
Knowledge Exchange in Collaborative Networks

Characteristics and
shifts in how knowledge
is exchanged in
collaborative networks.

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CODEC'S RESEARCH
PROJECTS ARE
BASED ON VICTOR
PAPANEK'S THOUGHT:
"THE ONLY IMPORTANT
THING ABOUT DESIGN
IS HOW IT RELATES
TO PEOPLE."

CONTENT

01

BRIEF

The brief presents the background of the research on knowledge exchange in collaborative networks: starting point, research topics, methods and objectives, and definitions.

"It's about the group succeeding, not the individual."

1.1:

Starting point

Currently, collaborative networks are evolving fast, taking on completely new forms and dynamics. On the SOCOLNET website (an international technical and scientific association, that promotes and stimulates scientific research, education, technological development, scientific and technical interactions among researchers in the area of Collaborative Networks) it is explained that: "A growing number of collaborative network organization forms are emerging as a result of the advances in the information and communication technologies, the market and societal needs, and the progress achieved in a large number of international projects. In fact, a large variety of collaborative networks have emerged during the last years as a result of the challenges faced by both the business and scientific worlds." (2017)

This deeply influences the ways of knowledge creation, aggregation, and sharing. New organisations, characterized by decentralized and transdisciplinary networks, are more than ever based on knowledge exchange, data, and constant change. Business, educational institutions, freelance networks and design-oriented organisations focus much stronger than before on areas such as networking, exchanging opinions and instant feedback. Collaborative networks are in practice, a way of fostering a policy of innovation.

1.2:

Research topics

01. **Matrix**
Understating the complexity of the subject. The bigger picture and scope.

02. **Characteristics of knowledge exchanged in collaborative networks**
What are the most important components? Where is the purpose of knowledge exchange for networks?

03. **Shifts in how knowledge is exchanged in collaborative networks**
How is knowledge exchange shifting in collaborative networks? Are these actions problematic?

1.3:

Challenges

"Collaboration is about people being the best they can be in the context that matters the most to them, rather than being what other people need them to be or everybody being perceived as being equal."
— Douglas Thomas

To know how knowledge exchange in collaborative networks works and which challenges or problems are faced, is important to understand the bigger picture. Therefore, during the primary phase of this research, we considered three main challenges that we might be confronted by in collaborative network cooperation. These challenges were mapped in order to develop and expose a future variety of cooperation between network partners. The challenges should be understood as an open step in a broad future solutions. The right interaction between network partners can

provide access and change/improve/shape knowledge accumulation.

Three main challenges detected for knowledge exchange collaborative networks are:

01. **Collaborative Structures**
One of the reasons collaborative networks fail is from a lack of general understanding about collaborative structures, dynamics or general purpose of the network (no matter if this is a long or short term purpose). Elements which play a key role in such networks are therefore one of the aspects that should be taken into account and integrated into the system (Pekkola, 2013).

Bogumiła Stawicka from the Polish non-governmental organisation KobieTY (Stawicka, 2017) highlighted during her interview that they didn't plan the knowledge exchange model of their network at the beginning. Now they are learning how to work with the accumulated knowledge gained over a year of working, and how to share it with the other networks that they are collaborating with.

02. **Collaborative Culture**
Mutual trust within the organisation in collaborative networks is another vital part of sharing information. Openness to provide other participants with detailed and also confidential data or knowledge must be considered. According to Finnish researcher Jarkko Tapani Tenhunen: "Openness and truthfulness have been highlighted as very important factors in the organizational culture of a network." (2006) Or as Douglas Thomas, researcher and journalist, said: "The challenge of our time is to come up with a new system of assessments that takes collaboration seriously" (in Birkegaard and Birkegaard Carlsen, 2015).

03. **Collaborative Decision Making**
The current working system is changing rapidly. The meaning of work (for example home-office or freelancing) and ways of working aren't the same as 50 years ago. According to Jonathan Winter "In the future, there will be no jobs, only careers" (2011). People are now settling in new working environments (or changing ones), in environments where

there is a need to collaborate with others. This is something many aren't used to, and these people are more likely to question the value of "knowledge sharing" with others. Let's look at some questions posted on Quora, an online social network:

"We should share knowledge?"
"Why isn't the majority sharing their knowledge on the web?"
"Should I share my skills and knowledge with colleagues when they are also my competitors?"
"Would you share your knowledge with people who will not share anything back with you?" (2015)

The term "decision fatigue" (Tierney, 2011) (the newest discovery involving a phenomenon called ego depletion; used in decision making and psychology fields) refers to the weakening of decision quality made by a human, after a long session of decision making. According to the research of Elizabeth Smith, many authors reported that 90% of workers keep their knowledge in their heads (2001).

1.4:

Objectives and methods

The methods chosen for this research are based on desk research (public sources, periodicals or academic database Proquest) as well as published interviews and observations. The main objective was an investigation of *characteristics and shifts in how knowledge is exchanged in collaborative networks.* Desk research and observations include analysis of the existing networks and their practices in various industries. The analysed information gathers the insights from members of collaborative networks, as well as from related experts and users outside networked collaboratives.

The research will be followed by a collaborative experiment (workshop) and corresponding publication.

1.5:

Definitions

Collaborative Networks

Jeffrey Shuman and Janice Twombly define the collaborative network as a, "collection of businesses, individuals and other organizational entities that possess the capabilities and resources needed to achieve a specific outcome" (2010). Nowadays, companies on the global market are facing the challenge to adjust to the specific needs of customers in highly competitive environments. The nature of competitiveness is now dramatically switching from concentrating only on products and services towards the ability to build networks across business. The purpose is to deliver specific value to users, which can be empowered by shifting into specific collaborative settings.

Variants of collaborative networks can include (Camarinha-Matos and Afsarmanesh, 2005):

- Virtual Enterprise
- Virtual Organization
- Dynamic Virtual Organization
- Extended Enterprise
- Virtual Organization Breeding Environment
- Professional virtual community
- E-Science
- (Collaborative) Virtual laboratory

Collaborative Network Design Principles

Traditional organisational hierarchies are facing a new form of working in collaborative networks. From increasing the value and potential of such a type of network, emerges a proposition of building relationships leading to a new form of working. Authors Jeffrey Shuman and Janice Twombly in an article "Collaborative Networks Are The Organization focused on innovation", emphasise five principles of a successful collaborative network (2010):

- Principle #1
  Organizations and people only actively engage in collaboration when the benefit they derive is greater than the time and effort it takes to collaborate.

- Principle #2
  Collaborative networks are fit for purpose. The purpose determines how the network is structured.

- Principle #3
  Every network has a choreographer, the individual or entity that organizes the network and is responsible for achieving the purpose of the network.

- Principle #4
  Governance is the system for managing the joint and individual work of the collaboration. Governance principles have both structural and behavioral components.

- Principle #5
  Innovation in organization design requires innovation in management.

Knowledge Exchange

Knowledge (practical or theoretical) is an understanding (being aware) of someone or something, which include; facts/evidence; data/information; descriptions, skills (or expertise); experience/education (perceiving, discovering, learning); practices (all kind: good and bad); case studies; researches/defeats (including taking risks and making mistakes). (Research and Knowledge Exchange, 2017)

Knowledge exchange is also perceiving work as a process which could gather (for example): academic staff, users of research and wider groups and communities to exchange and elaborate by mutually beneficial sharing of ideas, data, experience, and expertise.

South-South Knowledge Exchange

(south-south collaboration – a term historically used by policymakers and academics to describe the exchange of resources, technology and knowledge between developing countries) indicates the knowledge exchange as a powerful way of transferring, replicating and scaling up "what works" in development. By "just-in-time" sharing of information and experiences among development practitioners and leaders. Also, by learning about different development choices. (World bank, 2012)

Knowledge Workers

Term "knowledge workers" is closely related to knowledge exchange. Doug Cooper summed up the definition of the knowledge worker in a simple manner as a person who is "thinking for a living" (in Muscalu et al., 2014). The human factor is a crucial element
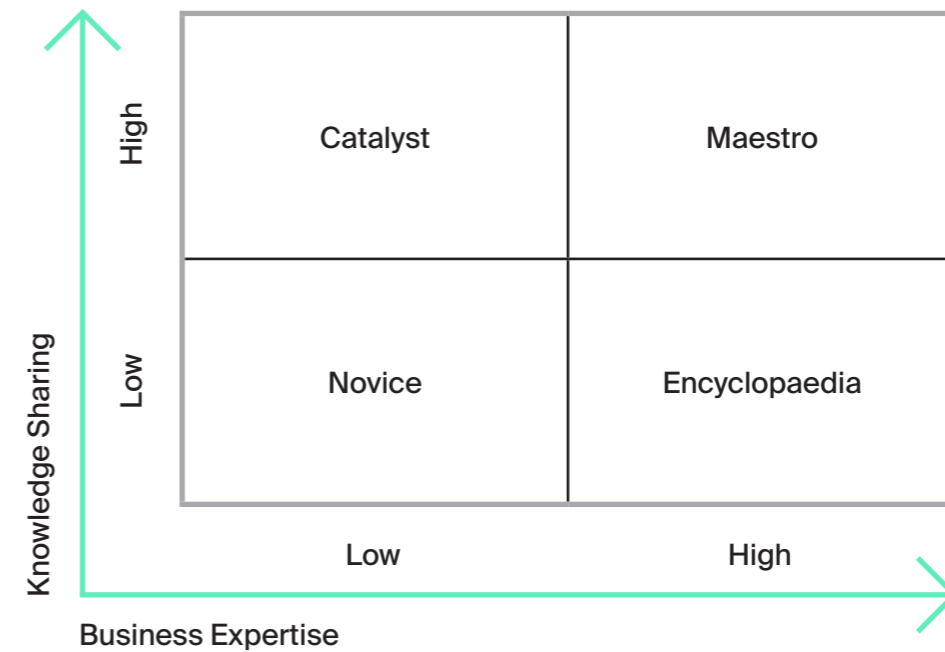

Fig. 1: Venn Diagram of Knowledge Sharing types
Source: Neil David John Topping (2016): *Knowledge sharing and business expertise factor relationships*

in effective knowledge sharing while society changed from industrial working to services and knowledge. The *Cambridge Business English Dictionary* characterizes knowledge worker as "an employee whose job involves developing and using knowledge rather than producing goods or services" (2011). Given that 90% of knowledge in any organisation stays in the head of the employee, knowledge sharing is a big opportunity in the strategic objective of companies (in Harris and Clark).

Different types of knowledge workers are illustrated in the Venn Diagram of Knowledge Sharing (Fig. 1). We can distinguish between high and low categories in connection with knowledge sharing and business expertise and four types of knowledge sharers:

- *Catalyst* – is an individual with the high degree of knowledge sharing but in terms of expertise is inconsistent, unreliable and not identified as one of the best.
- *Maestro* – individual who is accepted and considered as an optimal knowledge sharer with specific business knowledge.
- *Novice* – individual who does not have liability in terms of knowledge sharing, but can move to the position of encyclopedia through training and investment.
- *Encyclopedia* – individual who is an expert in a particular domain, but not placed or motivated to share knowledge with others.

Knowledge Exchange Models

These models describe the dynamics and social knowledge exchange process which occurs amongst dedicated teams or organisations. Such a model can contain practical frameworks to help practitioners and researchers integrate knowledge exchange into their everyday tasks, including problems, context, knowledge, or intervention. Or as the National Collaborating Centre for Methods and Tools in, "Knowledge exchange and knowledge brokering: A model", stated: "a knowledge exchange model could help decision makers, practitioners and researchers to plan and evaluate knowledge transfer initiatives and integrate knowledge exchange into their day-to-day activities" (2012).

Knowledge Management

Project management itself depends on accumulating knowledge. Knowledge management in a project is considered to consist of four groups of activities:

01. knowledge creation, for example, collection, combination, and refinement

02. knowledge administration, for example, storage, organization, and retrieval

03. knowledge dissemination within and outside the project

04. knowledge utilization and productization, for example, integration into products and decisions and application in other projects (Lapunka and Pisz, 2014).

Knowledge Sharing

Knowledge sharing is considered one of the most important aspects of the process of knowledge management. Active seeking and sharing of knowledge depends on the habit and willingness of the participants to be receptive in the sharing process. There are two types of knowledge sharing: tacit and explicit. Knowledge which is difficult to formalize is tacit; knowledge that can be structuralized and defined is considered as explicit. Tacit knowledge also tends to be socially driven in most cases. (Frost, 2010) Research carried out by Kowta Sita Nirmala Kumaraswamy and C.M. Chitale showed that "a collaborative approach to sharing knowledge is achieved through strong communication and discussion, concluding that this is the best way to collectively grow knowledge" (2012). Knowledge sharing included various of factors that should be considered. Figure 2 shows this relation in terms of knowledge sharing factors:

One of the practical examples of knowledge sharing is the online information platform Quora with its defined mission "to share and grow the world's knowledge". The content on the Quora platform is in the form of questions and answers, organised by community users. The users of the platform are users and creators at the same time. In terms of sharing of knowledge, one of the readers mentioned: "Sharing knowledge gives us self-esteem. You can feel a little pride every time you answer a question on Quora" (Amerland, 2016).

Fig. 2: Items related to Knowledge Sharing
Source: Neil David John Topping (2016): *Knowledge sharing and business expertise factor relationships*

02
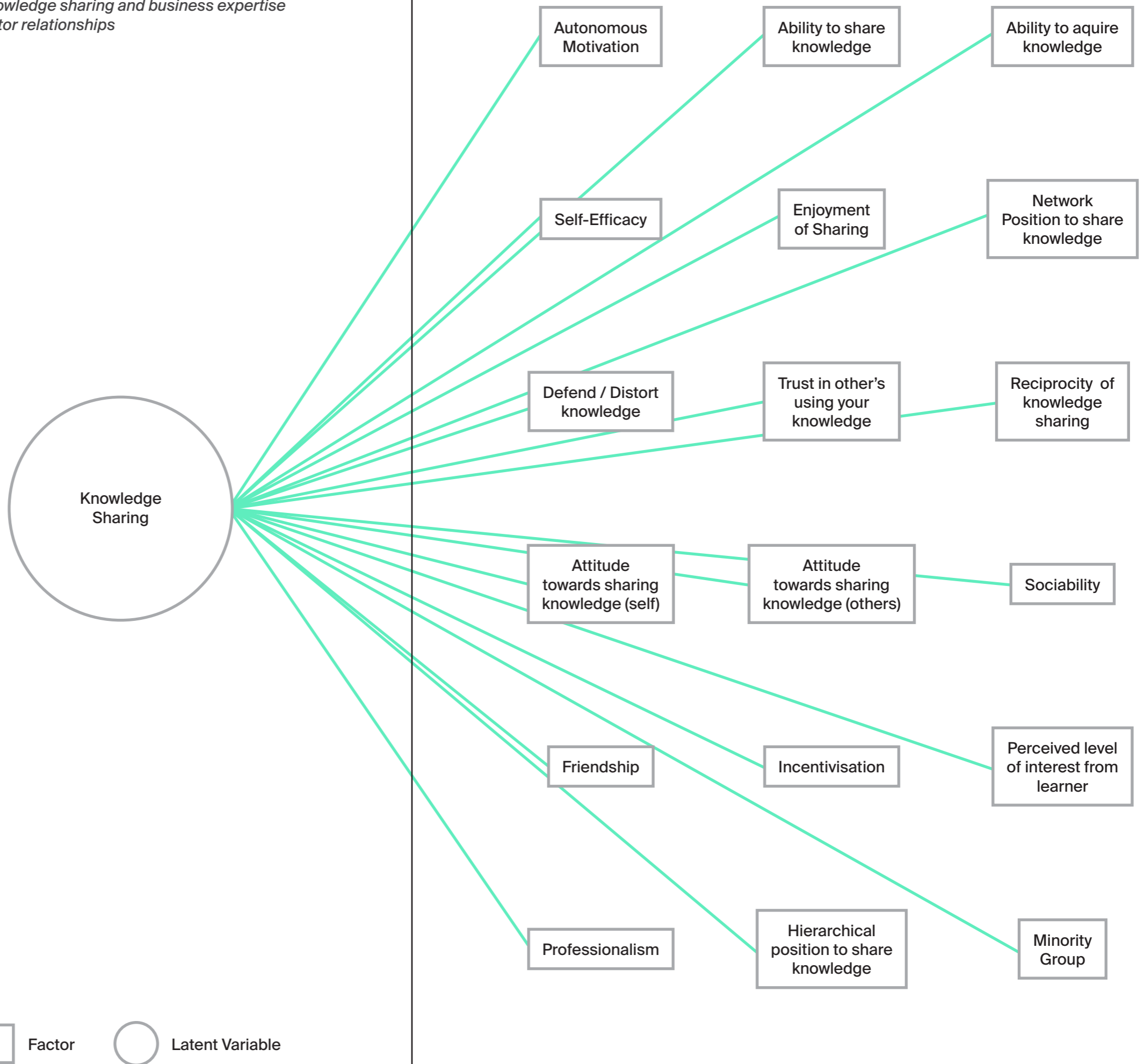
CONTEXT

By observing peoples' behavior, how people act and interact, further scenarios can be inspired. Shifts in collaborative networks and how knowledge is maintained show different perspectives that can be applied. Inspiration can be found everywhere but lately from powerful media sources such as documentaries or events. The statement "events have become magazines" by science fiction author Bruce Sterling (in Savov, 2011) tells us about the value and need of networking and knowledge sharing that has never been so necessary. Exchange of knowledge is also transmitted through the economy. Therefore, the shift from traditional models into sharing concepts is an important element in collaboration between people. All these components can help us on our way to a better understanding of the patterns of networking.

2.1:

Events as the new magazines

2.2:

**Collaboration Society –
revolution**

2.3:

The sharing economy phenomenon

Following Bruce Sterling's statement, we can observe that people nowadays tend to actively participate in biennials, workshops, conferences and all other networking events, more than reading about them in magazines or somewhere else. The need to experience such actions shows a growing trend towards these kinds of meetings. Eventbrite, the online platform for organizing, managing registrations and selling tickets, shows 3500 networking events in Europe in one month (2017). Knowledge exchange in such environments is provided by different tools to help to maintain communication flow.

One renowned example of a network event is BarCamp – an ad-hoc open event born from the desire for people to share and learn in an open environment. This platform is also called an *unconference* or alternatively, *open space conference*, described as participant-driven meetings. Participation is free for everyone who wants to contribute, share and learn in open environment focused on different topics. (BarCamp)

These kinds of events don't only offer a place to meet, but also educate people that the future of collaborative networks is important and the future itself lies in their active participation in building these collaboratives. It is important to stress that networks do not rely on the passive consumption of content.

We are living in a world where information is changing all the time. Alfred Birkegaard in his film, *Changes in research, knowledge creation* (2015), noticed that before people were used to living in a world with fixed content, but nowadays trust in knowledge from only one source is starting to crumble. The need to maintain the position of valuable knowledge is seen in the rise of alternative approaches at university courses, but their information/knowledge is being devalued. The growing numbers of postgraduate courses, workshops and evening lessons not only show the need to constantly renew our knowledge but also *the need of knowing the right knowledge*.

People are taking actions into their own hands. They are not waiting for the books to be published or reports to be executed. The revolution of collaborative society aims to have access to knowledge from every level on daily basis. The wisdom of the crowd appears to have a strong advantage by being based on instant, just-in-time feedback. It has been noticed that interdisciplinary collaboration is becoming central to future knowledge-based solution creation, needed to deliver fast answers with the new meaning.

Building on each other's knowledge places society in a position to innovate even faster and is considered new ground for contemporary science. For instance, the Foldit game – Save Puzzles for Science. It's "a revolutionary crowdsourcing computer game enabling everybody to contribute to important scientific research." (fold.it) This kind of network provides a unique opportunity to proceed faster, more significantly and build prototypes quicker. Also, it is not always about being right – it is more important to say it out loud or write it down and wait for somebody else to dispute it or develop it further. The long-term purpose of these kinds of collaborative societies is to establish a foundation of knowledge for next generations.

The popularity of the sharing economy is increasing due to well-known platforms like Airbnb, Couchsurfing, Uber, Blablacar, TEDx, eBay, and many more. This model of economy represents the disruptive, in terms of value for customers via online platforms. The definition of such a collaborative economy is an "economic system of decentralized networks and marketplaces that unlock the value of underused assets by matching needs and haves, in ways that bypass traditional institutions". To put it plainly, the sharing economy is built on access instead of ownership. (ShareNL, 2016)

Platforms for the sharing economy exist in different markets, from goods to knowledge, transportation, energy, food, healthcare, money and so on. In the collaborative environment we can distinguish between two types of organisations: peer-to-peer (P2P) platforms and peer-to-business-to-peer marketplace. In P2P platforms cooperation is straightforward between users, so the demand and supply are matched directly. The marketplace of peer-to-business-to-peer is where businesses act as intermediary between two users. For instance, P2P platforms like Airbnb, can face problems with key exchange, therefore some cafes in Amsterdam provide a key service where the host can leave or pick up keys. (Glind, 2015)

In the research, *Sharing is New Buying,* carried out by Vision Critical, the role of this new marketplace is emphasised. It states: "The collaborative economy isn't simply a new way of buying or selling: it's a powerful movement in which people are getting goods and services from each other (what people call the "sharing economy"), or even making them outright (also known as the "maker movement"). Just as social media enabled peer-to-peer sharing of content, the technologies of the collaborative economy now enable peer-to-peer sharing of goods, services, transportation, space and money at a speed and scale that were unimaginable a decade ago." (Incite Group, 2014)

03

CASE STUDIES

In section Three we start with knowledge exchange models almost twenty years old, and move all the way to their contemporary versions. Trying to understand these extensive systems and the users of these models was the starting point for the case studies research. Through these primary steps, key findings were formed: an emphasis on characteristics and on recognizing new shifts in knowledge exchange models.

3.1:

Existing knowledge exchange models

We took three knowledge exchange models under consideration: the transfer of information in organizations, networks, and teams.[1]

01. The SECI Model and Knowledge Conversion

The SECI model, most often cited by professionals, was introduced in 1996 by Ikujiro Nonaka and Hirotaka Takeuchi, shows a scheme (see Fig. 3 and 4 on the opposite page) in which four ways of knowledge are shared and created (in Frost, 2012):

- Socialization: Tacit to tacit. Knowledge is passed on through practice, guidance, imitation, and observation.
- Externalization: Tacit to explicit. This is deemed as a particularly difficult and often particularly important conversion mechanism. Tacit knowledge is codified into documents, manuals, etc. so that it can spread more easily through the organization. Since tacit knowledge can be virtually impossible to codify, the extent of this knowledge conversion mechanism is debatable. The use of metaphor is cited as an important externalization mechanism.
- Combination: Explicit to explicit. This is the simplest form. Codified knowledge sources (e.g. documents) are combined to create new knowledge.
- Internalization: Explicit to tacit. As explicit sources are used and learned, the knowledge is internalized, modifying the user's existing tacit knowledge.

As we can see, the SECI model requires that knowledge is continuously

converted and created as users practice, collaborate, interact, and learn. The process should be seen as a continuous, dynamic, swirl of knowledge rather than a static model. It is basically a visual representation of overlapping and ongoing processes that take place – or should take place – in an organization. The SECI model appreciates the dynamic nature of knowledge, knowledge creation, and also provides a framework for management of the relevant processes.

In 1998 the SECI model was adapted to the concept of "Ba", originally presented by the Japanese philosopher Nishida Kitarō and later developed by Shimizu Hiroshi. "Ba" is the equivalent of a place of interaction between open and hidden knowledge, which in turn leads to new knowledge. Adaptation of "Ba" to the SECI model is shown in Figure 5.

Socialization (Primary Ba)	**Externalization** (Ba of Interaction)
Internalization (Ba of training)	**Combination** (Cyber Ba)

Fig. 5: The adaptation of SECI model to the concept of "Ba"
Source: Karol Bancerz (2013): Modele organizacji wiedzy

1   Further research and workshop "Knowledge Exchange in Collaborative Network 2.0" are planned in the near future in order to investigate indicated models. To name just a selection: "Wellsprings of knowledge" by D. Leonard-Barton; "Process model" used in large consulting firms; "N-form" explained by Gunnar Hedlund etc.
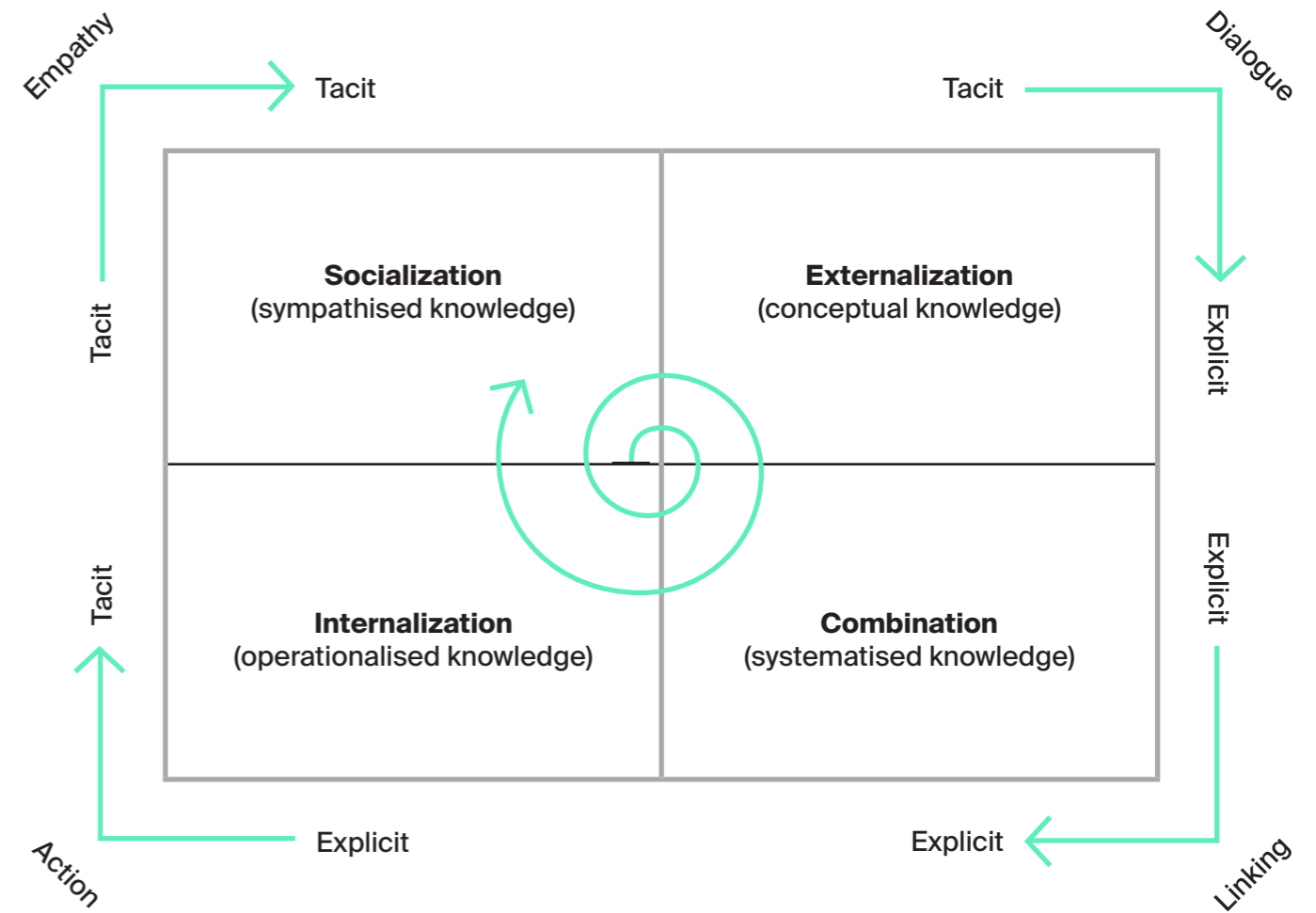

Fig. 3: The SECI Model and Knowledge Conversion
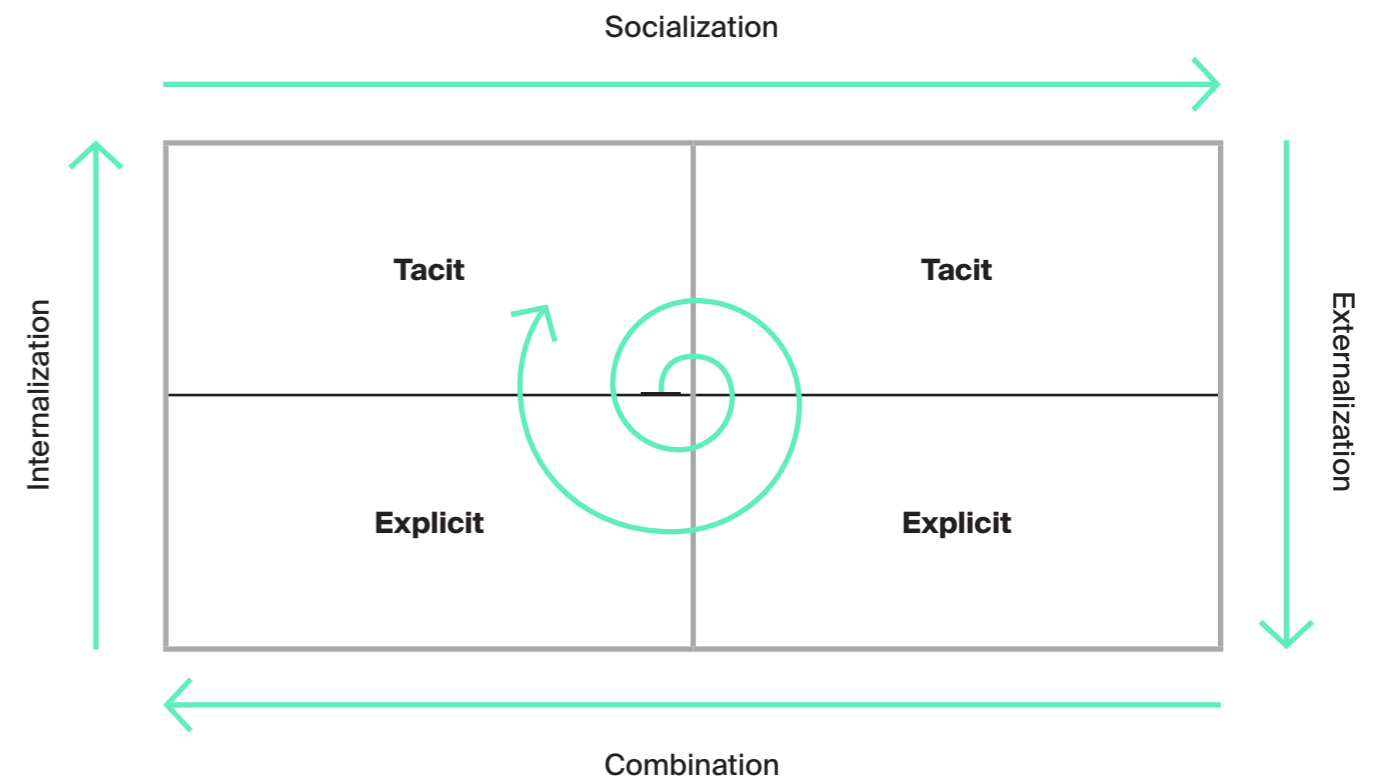Source: www.emeraldinsight.com

Fig. 4: The SECI Model Knowledge Creation Spiral. Source: Alan Frost (2012): *The SECI Model and Knowledge Conversion, Knowledge Management Tool*

Fig. 6: Research and knowledge exchange ecosystem
Source: University of Glasgow (2016): *Setting the context. The Knowledge Exchange Model*

ALL SORTS OF OTHER FACTORS

Publications

Consultancy

CPD

Collaborative Research

Networking/Events

New Knowledge

Reseach

Researchers

Processes

Materials

Technology

Know-how

Innovation

Skills

Contract Research

Licensing

Company Creation

Teaching

Knowledge

£

$

Start-up

Spin-out

Society

Government

Policy-makers

Small Companies

Big Companies

Jobs

New Products

New Services

Turnover

Policy Changes

Health Impacts

Cultural Impacts

Profit

R&D Expenditure

% Turnover from new products/services

ALL SORTS OF OTHER FACTORS

KT

Research Outputs

KT Channels

Users/Beneficiaries

Impacts

The K* spectrum

Fig. 7: The K* spectrum
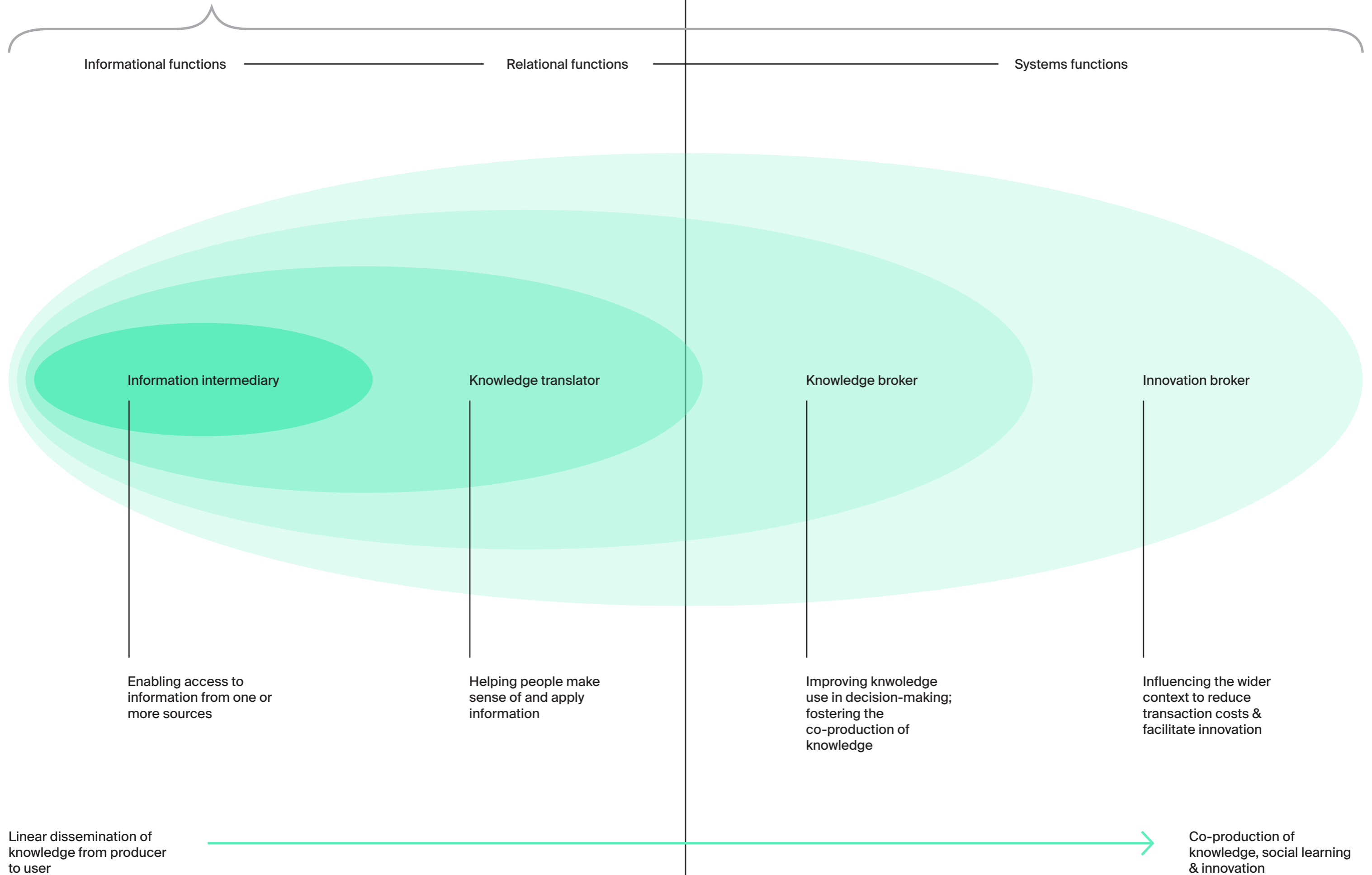Source: Kirsten Thomlinson (2014): *Understanding K* and What It Means for Knowledge Exchange in Scotland*

Informational functions ———————— Relational functions ———— Systems functions

Information intermediary

Knowledge translator

Knowledge broker

Innovation broker

Enabling access to information from one or more sources

Helping people make sense of and apply information

Improving knwoledge use in decision-making; fostering the co-production of knowledge

Influencing the wider context to reduce transaction costs & facilitate innovation

Linear dissemination of knowledge from producer to user

Co-production of knowledge, social learning & innovation

02. Knowledge exchange: setting the context

Similarly, the University of Glasgow Research Strategy and Innovation Office propagates the idea that knowledge exchange works in a whole ecosystem. They indicate that the main purpose of the research outcomes is to improve a company, product, policy framework or a community. Figure 6 illustrates the operations of this knowledge exchange ecosystem.

How does the research and knowledge exchange ecosystem work?

- We can see in Fig. 6 the non-linear movement of research and knowledge through the scheme, from primary steps to development and the eventual impact(s).
- Research and knowledge outputs vary from tangible (publications and materials) to abstract (know-how and skills). These outputs are further developed by means of knowledge exchange channels such as consultancy, further research or company creation.
- Knowledge exchange occurs when the leader of the outputs and the users / beneficiaries of the outputs (government, society, policy-makers) interact and share knowledge as a result of the knowledge exchange channel activities.
- The impacts of the research outputs come not from leader as the originator of the research and knowledge, but from the (end) users. (Research Strategy and Innovation Office, 2016)

03. Knowledge exchange: K* spectrum

K* is a term for the set of functions and processes of the various interfaces between knowledge, practice, and policy. K* improves the ways in which knowledge is shared and applied (see Fig. 7). Through this, processes already in place are improved to work more efficiently and sustainably. This model includes knowledge management, knowledge mobilisation, knowledge exchange, knowledge transfer, and knowledge to action. (Thomlinson, 2014)

Relevant findings on the knowledge exchange models research:

— characteristics:
- Knowledge exchange is a complex process requiring champions, collaborative partnerships, readiness and the adaptation of knowledge exchange to diverse stakeholders;
- Users of knowledge exchange models come from various fields (not only creatives) for example: health, army, universities etc.;
- Acceleration of innovation shortens the adoption cycle of new ideas and creates a better test ground for new initiatives;
- According to the SECI approach the transformation of elusive silent knowledge into a form that is perceptible by other members of the organization is a process of knowledge creation – thus creating the knowledge of the organization;
- The creators of the Japanese knowledge management model (SECI) believe that knowledge management is not superfluous in itself, but it is important to create value; knowledge is considered as a collection of values, emotions and premonitions;
- Gunnara Hedlunda pointed out the related to characteristics of the Western and Japanese knowledge management model: employment system, career models, and organizational structure (1994).

— shifts:
- Knowledge exchange exists in ecosystems and the meaning of external partners is growing;
- Knowledge exchange doesn't need to be financially rewarded;
- Users are the beneficiaries and creators;
- Knowledge exchange systems aren't only machines where information is processed. A knowledge exchange system is a living organism;
- A clear purpose of collaborative knowledge exchange networks is essential for proper understanding of structure.

3.2:

Existing knowledge exchange networks

In order to show the successful case studies among existing knowledge exchange networks we've selected six knowledge exchange models which we believe stand out from the crowd.

01. Knowledge Exchange
www.knowledge-exchange.info

The *Knowledge exchange network* consists of six national organisations from Finland, Denmark, Germany, UK, Netherlands and France concentrated on the development of high schools and research. Their aim is to use digital technologies in order to achieve open-source knowledge, experiences and resources. They support the development of open scholarships by "raising our collective voice to inform national and international policies and promote common approaches, so that it becomes easier for scholarships to cross national boundaries" (Knowledge Exchange, 2017).
According to the vision of Knowledge Exchange, collaboration and open approach can bring:

- improvement of transparency and engender greater trust in research
- increase of effective sharing and usage of research
- support wider participation in research

The Knowledge Exchange works in three main areas:

01. *Structural exchange* (meeting of partners in order to exchange information, share outcomes and discuss opportunities)
02. *Exchange between experts* (identification of challenges and promising opportunities from the experts connected with The Knowledge Exchange)
03. *Careful and flexible use of resources* (annual activity plans by senior management with emphasis on the focus areas and priorities)

02. Fuse
www.fuse.ac.uk

Fuse is a collaboration within the medical industry. The Public Health Research Centre of Excellence operates as a virtual centre across five universities in England. The collaboration is maintained with a variety of partners across all sectors involved in public health. There are four stages to building a collaboration: awareness raising, development of multiple ways to work with partners, building trust and providing updates and feedback of activities.

The main aims are:
- Deliver world-class public health research
- Build sustainable capacity
- Build effective and lasting partnerships

How does Fuse impact public health using a collaborative approach with knowledge sharing? "We start from the assumption that knowledge exchange is a two-way process involving high levels of collaboration and relationship-building (typically face-to-face) with policy and practice partners if it is to be successful. Building collaboration takes time because it involves not just formal partnership agreements but also trust, the development of respectful relationships, the growth of understanding respective systems and structures and the pressures (organisational, professional, political and other) that surround evidence usefulness and uptake in reality." (Fuse, 2015)

03. The Encore Fellowships
http://encore.org

The platform Encore Fellowships Network (EFN) matches high-skilled professionals with social purpose organizations into paid transitional assignments. This network provided by Encore.org represents innovative fellowships program designed to promote and facilitate "encore careers" and deliver a new source

of talent to organisations. Through a carefully designed process, the Encore Fellowships program connects experienced professionals at the end of their midlife careers with social purpose organizations.

The pilot programme started in 2009 in Silicon Valley and it was remarkably successful with the strong social change agenda. What makes this network prosperous is a well-defined pathway for experienced professionals to transition from the private sphere to the non-profit. Organisations in the non-profit sector are encouraged to host Encore Fellows who can bring their broad skills and help in developing the host organisation. The core programme design was defined by 7 elements which are shown in the Figure 8.

The network is currently supported by various organisations and donors, including corporate, foundation and individual supporters across the United States. By now, EFN provided matching with host organisations for more than 1500 Encore Fellows. "The Encore Fellowships Network makes it as easy as possible for independent organizations to start, sponsor or operate effective Encore Fellowships programs in their community or organization." (Encore.org, 2014)

04. **Vision2020: The Horizon Network**
http://2020visionnetwork.eu

Vision2020 is an Open Innovation platform for research organisations and companies participating in the Horizon2020 EU funding programme. The European funding programme Horizon2020 is dedicated for research and innovation with an 80 billion Euro budget. The network includes research organisations, innovating SMEs, experts, corporates, and associated partners. Vison2020 was launched with the purpose to strengthen cooperation between business-university collaboration across Europe.

Facilitation of collaboration between partners is provided by an online platform called CrowdHelix (www. crowdhelix.com), which was specially developed for Vision2020. Through the platform companies and academics

can find a match for collaboration opportunities on specific projects or proposals. Currently, there are 165 active organisations with more than 1160 users working on 218 opportunities. Research areas that the users can participate are climate, cybersecurity, digital, energy, health, manufacturing, smart cities, society etc.

Director Abdul Rahim stated: "Essentially, the ethos behind Vision2020 is to bring together excellence-based research organisations and highly innovative SMEs so that they can form trusted consortia and collaborate together effectively. Our main goal is to facilitate this process and connect innovators across different sectors, avoiding "gate-keepers" where possible." (Vision2020)

05. **Impact Hub**
www.impacthub.net

Impact Hub is a global entrepreneurial network with a locally rooted base. Members collaborate in an "ecosystem of resources, inspiration, and collaboration opportunities to grow impact." The beginnings started in London in 2005 and today the Impact Hub Network has more that 80 Hubs with more than 15,000 members around the globe. The main idea is to create sustainable impact that inspires and empowers people by realizing enterprising ideas. Impact hubs act in different areas such as education, sustainability, environment, employment, international development, social entrepreneurship, and many more.

Impact Hub consists of 3 elements:
- vibrant community with passionate and entrepreneurial people;
- meaningful content as a source of inspiration through events, innovation labs, learning spaces, incubation programs etc.;
- inspiring space with flexible and highly functional infrastructure to work, meet, learn and connect.

High-Impact Engagements	Encore Fellows bring significant transferable skill to high-quality, high-impact assignments design to fulfil critical needs and build organizational capacity for nonprofits.
Meaningful Durations	Encore Fellowships last six months (full time) to 12 months (part time), with goal of providing enough time for fellows to integrate into their nonprofit work hosts and achieve meaningful impact.
Compensation	Encore Fellows receive a stipend of $20,00 to $35,000 paid by corporate and philanthropic sponsors and participating work hosts.
Selecting and Matching of Fellows and Social Purpose Organizations	Fellows and nonprofits are matched according to specific criteria designed to maximize the benefits of the experience for both parties.
Onboarding	Fellows receive guidance and support during an initial period of integration into their NPO work hosts. The goal is to define a substantive assignment and then integrate fellows, so that they quickly become productive members of the organisations they will be working with.
Learning Community	All fellows in a given year convene regularly for a mix of peer-to-peer learning, professional development, and mentoring from alumni fellows.
Program Operator	An organisation that manages both the big picture issues — including bringing in funders and corporate sponsors — and the details and relationships involved in running a high-quality program.

Fig. 8: Encore Fellowships Core Program Design
Source: Beth Benjamin (2013): *The Encore Fellowships Network*

06. **ShareNL**
www.sharenl.nl

Sharing rebels Harmen van Sprang and Pieter van de Glind are enthusiastic about the topic and practices of a collaborative economy. Harmen van Sprang used to work as a freelance innovation consultant and after several informal meet-ups on he started the organisation shareNL with Pieter van de Glind. They came together to develop the sharing economy in the Netherlands and now worldwide. Today, the collaboration and knowledge exchange is between different institutions such as city governments, corporates, start-

ups and research institutions, with the common topic of the sharing economy. They call shareNL the knowledge and networking platform for the sharing or collaborative economy. "It strives for the empowerment of the peer, and moving from a sharing economy to a sharing society. It's all about getting access to – instead of buying – the products and services that lead to a happy, sustainable and connected life." (Iorga, 2016)

Currently they are involved in several projects including city sharing, mobility and lab meetings for the development of collaboration. The most visible is the Sharing city concept that includes Amsterdam Sharing City with the aim

to become the first sharing city in Europe. The city in these terms provides opportunities for collaboration in the fields of sustainability, social cohesion and economy. They connect municipality and corporations with the idea of the sharing economy by facilitating the process and supporting pilot projects. For example integrating sharing projects like Thuisafgehaald (meal-sharing), Peerby (asset-sharing) and City Pass (Stadspas) for disadvantaged people to access to cultural events, sports or public transport and bring them access to the services of a collaborative economy.

Additionally, shareNL is involved in the stimulation of city-to-city learning through a national Sharing City platform in the Netherlands. The global attention this has received is undeniable and can be observed in cities around the Europe, in Seoul or Tokyo where shareNL consult on their approach. Amsterdam is now an inspirational place, where the collaborative approach is developed by particular activities such as meetings of deputy mayors from New York, Paris, Seoul and Barcelona on the topic of creation of global city-to-city learning approaches.

3.3:

Analogies

A few selected analogies are presented in order to shed light on how much collaborative knowledge exchange networks are already part of our lives:

Cohabitat
www.cohabitat.net
> A Polish networking cooperation in the social sphere between people, organisations, institutions and enterprises. The main area is natural technologies and permaculture within open source collaboration. By the creation of a new way of connection between humans and ecosystems they build an original form of relationship. Cohabitat spreads their knowledge through events, workshops, community meetings and publications. According to one of the Cohabitat founders, Paweł Sroczyński: "Cohabitat undertakes joint ventures to create accessible, open solutions, products and activities to improve the health of local communities and ecosystems." (Cohabitat, 2017)

Profinaut
https://profinaut.com
> A Czech and Polish network platform dedicated to high-skilled professionals looking for new challenges in small-scale projects and consultations. People inside the Profinaut network can supplement their work life with short term projects or consultations. For companies, it's a way to get high-skilled experts involved in their development and creates interesting opportunities.

International Network of Churches
https://inc.org.au
> Building a community can also be done through the social networking of churches. The way people interact, how they behave and how the system within churches is working, can be used as an analogy for collaborative networks. Developing social community and strong relationships can foster knowledge exchange in reaching common aims.

Erasmus+
https://erasmusplus.org.uk
> Erasmus+ is the European Union programme for education, training, youth and sport. It runs for seven years, from 2014 to 2020. Erasmus+ aims to modernise education, training and youth work across Europe. Through this programme Europe is also facing socio-economical changes upcoming in future years. It propagates education and activities as the core attribute for emphasising European values, social integration and connecting cultures within the European union.

04

RESEARCH
RESULTS —
WHAT'S NEXT?

"We need to use not just the brains we have, but also the brains we can borrow."
— Woodrow Wilson

4.1:

The state of research

The research shows the complexity of the subject but also the future potential. Knowledge exchange in collaborative networks is constantly expanding and continuously improving. People seek already "proven" knowledge but are also ready to share answers by themselves. By being open to knowledge and on the other hand, with experts openly sharing knowledge, more open discussions and faster outcomes in building bold ideas can emerge. The knowledge exchange models presented show that networks are more likely to develop and grow organically within their ecosystems.

The examples mentioned in this research (SECI, Knowledge Exchange model by University of Glasgow and K* Spectrum) show the deep need to create an appropriate model which can adapt according to circumstances. This research aims to grow and explore the complexity of its subject in future phases (one of them being a workshop: *Knowledge Exchange – How to create, measure and maintain it in a collaborative network?*). Current analysis is informing the framework and shows the complexity and possible varieties of the researched subject.

4.2:

Social changes

In order to predict the future and develop new scenarios for collaborative networks, it is necessary to observe social changes and trends in knowledge exchange. New services, events or human behaviours can inspire and show the bigger picture in the field of new collaborative network development.

The selection of potential social changes, that might and can influence collaborative networks are:

- Silver tsunami – a metaphor for describing aging populations. According to a 2009 United Nations *Human Development Report*, current trends in aging populations are unprecedented. Not only are these trends pervasive, their consequences are likely to be profound and enduring. With advances in medical research and health care the average life expectancy extending, shifts in age structure can have a profound impact on a broad range of economic, political, and social issues. (Klugman, 2009)

- Give to get – an approach which is based on a notion to help others without any expectation of receiving anything in return. Instead of monetary reimbursement the outcomes are *measured* in understanding, awareness, engagement.

- Birth & growth of "networks of imagination" – in words by Douglas Thomas this is a "community, technologically mediated collective action, and imagination, when players (mostly computer gamers) begin to act through joint investment in the pursuit of common ground. This kind of collective action is more than networked work or distributed problem solving. It requires that problems be thought of as group problems and that the goals of all actions and practices are to move the group forward. It is also more than an online community, where common interests unite people at a distance. Our goal is to understand the shift in thinking that occurs in the transition to virtual worlds, particularly in cases where participants need

to engage in highly collaborative group work" (Thomas and Brown, 2009).

- From monetary economy to reputation economy – companies have to pay attention to the economics of the network and adapt to it because they only have two choices: adapt or vanish. "Welcome to the reputation economy, where your online history becomes more powerful than your credit history." (Botsman, 2012)

- The Pro-Ve conference – a conference for collaborative network professionals. A selection of conference topics clearly shows how important knowledge exchange is in collaborative networks: collaborative models; platforms and systems for data-rich worlds; collaboration and collective awareness in a data-rich world; collaborative big data intelligence; dynamics and evolution of collaborative virtual-physical ecosystems (www.pro-ve.org).

- Network Impact – a network that helps other networks to grow and develop. "Our mission is to help share what we learn and build the social impact network field." (www.networkimpact.org)

- Sharing economy – new economic model where individuals can borrow or rent assets which are owned by someone else. Examples are AirBnb, Couchsurfing, Blablacar, Uber, craigslist, Kickstarter etc.

- Unconferences – called also open space conferences. This is an example of meetings driven by participants. Everyone can freely participate, share and exchange information about specific topic within a discussion. (Bagley, 2014)

4.3:

Recommendations

Recommendations gathered during the research in order to help build solid groundwork, shape the structure, and use the right tools and methods.

01. **Build a solid groundwork**
Before developing a new collaborative network for knowledge exchange answer the next questions:

- What is the purpose of the network?
- What type of network is it?
- What stage of network evolution has the network reached?
- What are its members most important value propositions?
- How good do they feel about the value they are getting from participating in the network?
- What degree of connectivity do its members share? And what is the "shape" of the connectivity?
- What is being transacted (what is flowing) between members?

02. **Defining the structure**
"Diversity of the network is more important than the size."
— South-South Knowledge Exchange

- A need for a conceptual framework: integration helps in building a truly international network. According to South-South Knowledge Exchange, there is a need to build a truly international Capacity Development Network to integrate the excellent work done by numerous sources. There is a need for a conceptual framework and a set of analytical tools to guide developers and users.

- Recognizing the interdependency of all participants.

- Growing organically: in order to do that, a network has to be trusted, keep promises, be authentic, honest

and transparent in its actions. Network partners should see added value in collaboration and this should be communicated. Setting up realistic objectives, and finding fulfilment of expectations and needs from the partners is a must in a collaborative network. Also, network partnerships should be built on trust, not control.

- Find a network choreographer: first and foremost, he or she has to be an entrepreneur, a passionate advocate, a dedicated coach, a mentor, and tireless communicator. Shuman and Twombly defined the network choreographer

as: "the individual or firm responsible for designing the collaborative network by identifying the right dimensions for each of the factors in the network design model" (2010). This person or group should ensure that the value proposition will be attractive and understood by members of the network.

- Understanding human behaviour: providing all participants detailed and also confidential data or knowledge to eliminate decision fatigue. "Information only has value if someone has the ability to do something with it." (McChrystal, 2014)

03. **Find tools and methods:**

- Perceive challenges: in a collaborative network recognize the potential of design thinking methodology. A tool called *How Might We* (HMW) can be of some help. By framing the challenge as a *How Might We* question, organizations, teams or designers will set themselves up for an innovative solution. For example: *How Might We* help to organize (action) structure for a collaborative network (whom) in order to show transparency to the audience (change something). (Design Kit, 2017)

- Stop waiting for end results: build on drafts instead. Instant feedback and communication in real time can bring you much further. Also, appreciate peer review.

- Regular check-ups: by this step you can help network builders to track progress and help to decide what the network needs next.

- Produce content and get instant feedback: use social media, blogs, forums, platforms like Quora, Medium, LinkedIn.

05

APPENDIX

5.1:

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5.2:

Research Team

Justyna Turek, Change Pilots (Principal Investigator)
By using emotional intelligence and visual experience as a tool Justyna helps to create a visual path of processes, services and growth. She is able to visually express the results and create a story that inspires. During her process she uses different methods of creative thinking and creation to clarify the message. In the past, around the world, Justyna has deepened her knowledge and skills in various schools, design studios, ateliers and culture centers. Managed and designed projects for music, design and art festivals. Passionate about travel, exchange and benchmarking best practices, experiences and practical creative knowledge. Her areas of focus are urban development, urban planning, entrepreneurship and visual storytelling.

Michaela Mydlová, Change Pilots (Researcher)
Michaela is a constant seeker of new inspirations from different areas and environments. With a strong feeling for emphatic methods, she puts emphasis on customer understanding and creating better solutions for users. She is marketing, research and innovation oriented graduate of the University of Economics in Prague, also accomplished her studies connected with international business in Riga (Latvia) and Wroclaw (Poland). Her working experiences include marketing research and design thinking within agencies in Prague. Working with the methods of Human Centred Design she enriches her passion into improvements, new viewpoint and openness toward experimenting. Interested in eastern cultures, art and dance.

Join! Call for participation, collaboration and feedback!
If you would like to help, give an opinion or share an idea regarding the research, you are more than welcome. We will appreciate it. Please send an email to justyna@changepilots.pl with postscript (Knowledge exchange models in collaborative network).

5.3:

About CODEC

CODEC, the Co-Design Collaborative is a design driven interdisciplinary network of highly skilled and experienced individuals, companies, associations and research institutes in Europe. We co-innovate with our users by combining rigorous research, vast practical experience and in-depth know-how. We are driven by a common social purpose: to not only do things right, but do the right things.