

# **Understanding Communities of Practice and Reflective Practices in Post-Industrial Organisations**

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## **1. Introduction**

Organisations are always subject to change due to the changing societal, economic, and technological environment they operate in. Post-industrial organisations (PIOs) emerged in response to the increased complexity of the organisation of labour (Bell, 1976). This change triggered soaring demand for specialized services and shifted the focus from production to service. Contrary to the production focus of industrial organisations (IOs), the PIO does not offer a tangible craft or tangible output. Instead, their core business is the offering and exchange of knowledge (Bell, 1976; Cohen & Zysman, 1987). Recently, the increased speed of technological developments in the environment combined with disruptive events, such as the COVID-19 pandemic (Gurumurthy et al., 2021), have changed the environment PIOs operate in profoundly due to an increase of organisations working completely online. This development, alongside the increase in connectivity and the rapid automation of business in recent years, has further altered the organisational environment, accelerating the emergence of more and more hybrid work and fully online work in organisations (Nicolini et al., 2022).

To tackle the challenge of the rapidly changing business environment, organisations must create and develop the knowledge the organisation and its members possess (Zboralski et al., 2006). To achieve this, organisations need a labour pool of flexible and enterprising workers with an appetite for learning (Helyer, 2015). Organisations that require a change to happen benefit from information sharing between members (Sánchez-Cardona et al., 2012) as people drive change (Hendry, 1996; Purc & Laguna, 2019). Renowned consultancy and business information organisations also recommend companies to focus on people and learning (De Smet et al., 2021; Marr, 2022). However, businesses are susceptible to rigidity; their structure and work methods hamper information sharing and learning (Brown & Duguid, 1991; Serrat, 2017).

Learning can happen in organisations through social practices known as Communities of Practice (CoPs). This concept originates from research into knowledge sharing in industrial organisations as a way in which knowledge and practices are created and shared between members who work together (Lave & Wenger, 1991). By working, a person learns (Tikkamäki & Hildén, 2014), as such it is a highly effective way of becoming knowledgeable and acquiring experience of practice (Billett, 2011; Lave & Wenger, 1991). Reflection can also help organisations tackle dramatic changes in the organisational environment (Billett & Hodge, 2016). Reflection enables the adoption of knowledge in practice and facilitates continuous learning. CoPs are particularly well suited as places for reflection to occur (Akella et al., 2021).

Knowledge-based skills are essential to the core business and function of PIOs (Hatch & Cunliffe, 2013). Regaining the knowledge needed in an organisation to tackle the challenges

of the rapidly changing environment is a hardship of the modern workplace (Harvey et al., 2013; Nicolini et al., 2022; Pyrko et al., 2017; Roberts, 2006). Furthermore, technological advancements in the environment can quickly upend the current knowledge base of an organisation, causing its tacit knowledge to become obsolete (Bagozzi, 2007; Nicolini et al., 2022). CoPs could bolster the ability to create and share practices and knowledge in PIOs. However, whether CoPs are present in PIOs whose members work fully online or in a hybrid setting is up for debate (Amin & Roberts, 2008; Fuller & Unwin, 2004; Myers, 2022; Nicolini et al., 2022). PIOs differ greatly from IOs in regards to their characteristics (Ford & Bowen, 2008; Hatch & Cunliffe, 2013; Huber, 1984; Meyer et al., 2014; Thompson et al., 2001) and business offering (Bell, 1976; Hatch & Cunliffe, 2013). As 61% of all enterprises in the EU are some kind of service organization, with just 8% being classified as an industrial enterprise, having a lack of insight in CoPs in relation to PIOs and whether they are present in PIOs whose members work hybrid or online is an oversight (Nicolini et al., 2022). This research aims to address the gap on whether CoPs exist in PIOs whose members work hybrid or online. Additionally, as reflective practices are known to enhance the working of CoPs in IO organisations (Akella et al., 2021) looking into whether they are employed and if so how, will be part of this research as well. Therefore, the following research question was formulated: “How do Communities of Practice exist and employ reflective practices in post-industrial organisations whose members work predominantly hybrid or online?”

To answer the research question, exploratory research was conducted through a qualitative multi-case study and documentary analysis of two cases. The cases comprise two organisations offering advice/consultancy services. A multi-level perspective is taken by looking both on an organisational level and individual member level to CoP characteristics in PIOs. This research contributes to science by providing insights into the presence of CoPs in PIOs, the characteristics of IOs they exhibit as well as insights into potential barriers and enablers of a CoP in this specific environment. In terms of practical relevance, this research provides insights for organisations who qualify as a PIO into what barriers and enablers might exist in their organisational environment or what individual members encounter.

The outline of the research report is as follows: In chapter two the theoretical framework of the research is depicted. Chapter three contains information on the chosen methodology. Chapter four outlines the findings. Chapter five outlines the discussion and finally chapter six details the conclusion, limitations, and recommendations for future research.

## 2. Theoretical Framework

### 2.1. The post-industrial organisation

Post-industrial organisations (PIOs) emerged alongside the known industrial organisation (IO) as a response to increased complexity and indirectness in the environment. PIOs aim to fulfil demand for specialized services that emerged in society (Bell, 1976; Cohen & Zysman, 1987). Despite the prevalence of PIOs, they coexist with IOs as the business offering of IOs remains relevant. Society is thus prevented from becoming a full-on, service-oriented ‘post-industrial society’ comprised only of PIOs (Meyer et al., 2017; Vogt, 2016).

#### 2.1.1. Characteristics of post-industrial organisations

IOs and PIOs have different business offerings. Where IOs offer tangible goods, PIOs focus on offering and exchanging knowledge (Bell, 1976). This interactive component is central to the PIOs core business offering and is characteristic of service-oriented organisations where an interaction between the producer of the service and the user is required (Bolton & Saxena-Iyer, 2009; Mills et al., 1983). By absorbing and altering essential information of the customer and the environment, PIOs generate output that is shaped by the customer’s requirements and which needs to be utilized immediately to mitigate the risk of the information vanishing or becoming obsolete (Mills et al., 1983). Table 1 provides a comprehensive overview of the characteristics of IOs and PIOs.

Table 1. Social structure, physical structure, and nature of work characteristics of industrial and post-industrial organisations

	<b>Industrial organisations (IOs)</b>	<b>Post-industrial organisations (PIOs)</b>
<i>Social structure</i>	Fixated on control with a hierarchical and bureaucratic structure and vertical communication.	Focus on delegating managerial responsibilities; horizontal communication and learning in temporary teams. Has a flat hierarchical structure that promotes autonomy and aids creativity, innovation, and initiative which allows for the easy crossing of boundaries between jobs, units, organisations, and the environment. Tendency to try and formalize unregulated activities like experimentation and the gathering of soft information by management.

Table1. (Continued)

<i>Physical structure</i>	Industrial locations concentrated in urban areas; tend to have a nationalistic worldview with a focus on the local environment; product is tangible and transport time is higher.	Less likely to be in urban areas; less transportation time required for their 'product' and able to link to distant locations easily.
<i>Nature of work</i>	Work is mainly deskilled routine labour that requires the mastery of specific practical tasks and jobs.	Work is unpredictable and can change rapidly; knowledge-based skills are essential; teamwork goes across functions and emphasizes continuous learning and the use of specialized knowledge. Mainly (sub-)contracting and freelancing with a high level of telecommuting.

Table adapted from *Organisation theory: modern, symbolic, and postmodern perspective*. Hatch and Cunliffe (2013, pp. 82-83). Copyright 2013 Oxford University Press. Sources used for additional information on post-industrial organisations: Ford and Bowen (2008); Huber (1984); Meyer et al. (2017); and Thompson et al. (2001)

Derived from the characteristics of PIOs mentioned in Table 1 a PIO in this research is defined as having 1) a **social structure** that is flat, non-hierarchical and which promotes autonomy, creativity, and the delegation of authority. However, regarding experiments and information-gathering activities, a **certain degree of formalisation** is adopted, 2) a **physical structure** that is scarcely confined to a location due to the absence of tangible products offerings, and 3) a **nature of work** that focuses on knowledge-based skills, continuous learning, and makes extensive use of telecommuting (Ford & Bowen, 2008; Hatch & Cunliffe, 2013; Huber, 1984; Meyer et al., 2017; Thompson et al., 2001).

### **2.1.2. Learning in a post-industrial organisation**

PIOs rely on organisational and intangible human capital to function. Organisational capital is information that remains when employees leave the organisation. Human capital is built upon organisational capital and is the intangible knowledge that resides within the minds of employees. PIOs rely on human capital to increase organisational performance (Meyer et al., 2014). Learning, information sharing and gaining experience happen by working together (Billett, 2011; Lave & Wenger, 1991; Meyer et al., 2014). However, compared to IOs, PIOs are more at risk of losing their organisational and human capital when rapid changes occur in their business environment (Bell, 1976). Disruptive events such as rapid technological advancements quickly upend the current knowledge base in organisations, causing its tacit knowledge to become obsolete (Bagozzi, 2007; Nicolini et al., 2022). As PIOs depend on tacit knowledge for their business offering (Bell, 1976; Meyer et al., 2014), disruptive events pose a significant risk.

To tackle rapid changes in the environment, organisations need to actively create, cultivate, share and change the knowledge the organisation and its members possess (Sánchez-Cardona et al., 2012; Zboralski et al., 2006). To achieve this change, organisations need access to a labour pool of flexible workers with a versatile skillset and appetite for learning (Helyer, 2015). People make change happen (Hendry, 1996; Purc & Laguna, 2019) and their development is paramount to change a business (Sánchez-Cardona et al., 2012). Lave and Wenger (1991) Communities of Practice (CoPs) in industrial, craft-based organisations and are helpful in tackling rapid changes in the environment.

## **2.2. Communities of Practice (CoPs)**

The concept CoPs provides insight into a way of learning in craft-based organisations, namely learning through working. Traditionally CoPs are seen as groups of people in physical proximity that have a tangible craft who share and create knowledge and practices regarding their craft beyond formal group structures (Lave & Wenger, 1991). However, Cundill et al. (2015) notes physical proximity is not required for a CoP to occur. Appreciation of knowledge of the craft gained by working was lower than that of theoretical knowledge which caused powerful communities that influence learning in organisations to be overlooked (Brown & Duguid, 1991). However, when CoPs were found to facilitate “...the creation, sharing and utilisation of knowledge in an organisation” which has a beneficial influence on the organisation's “strategy, operations and bottom line” (Retna & Tee Ng, 2011, p. 55) appreciation for them improved.

### ***2.2.1. Characteristics of Communities of Practice***

Within an organisation, CoPs can stay nimble over time. This ability of a CoP to stay flexible, despite the tendency of businesses themselves to become inflexible which hampers learning (Brown & Duguid, 1991; Serrat, 2017), is rooted in CoPs being **self-governed** by nature (Pyrko et al., 2017) as well as the **cycle of continuous renewal** of participants taking place in a CoP. New participants that join a CoP are taught by old-timers. As they gradually grow into old-timers, the participants take over from the previous generation in the CoP (Lave & Wenger, 1991; Wenger, 1998). The changing identity of individual CoP participants and the continuous renewal of a group makes a CoP's nature evolve. Table 2 depicts CoP characteristics and boundary guidelines of a CoP.

Table 2. *Communities of Practice characteristics and boundary guidelines*

<b>Type of identifier</b>	<b>Description</b>
<i>CoP characteristics</i>	<ol style="list-style-type: none"> <li>1. Shared commitment to a domain of interest</li> <li>2. Helpful group relationships</li> <li>3. Development of shared practice takes place</li> </ol>
<i>CoP boundary guidelines</i>	<ol style="list-style-type: none"> <li>1. (At least) one community leader</li> <li>2. Connectivity is established</li> <li>3. Learning instances are established</li> <li>4. Community artefacts are present and up to date</li> </ol>

Sources: Cundill et al. (2015); (2000); and Wenger et al. (2002)

Despite the existence of the characteristics outlined for identifying a CoP, identifying one is largely dependent on intuition as there are no strict protocols to identify them (Hougaard, 2009). Additionally, questions surrounding the characteristics and parameters mentioned here, that aid with identifying a CoP, are further exacerbated by questions surrounding the durability and applicability of the concept of CoPs in the current business environment. As CoPs are rooted in long-term knowledge and practice sharing (Lave & Wenger, 1991; Wenger et al., 2002) their long-term alliance-building and sustained commitment-based participation (Nicolini et al., 2022) clash with the rapidly changing business environments in the modern workplace that are cutthroat, hierarchical, fast-paced and ego-centric in nature (Harvey et al., 2013; Nicolini et al., 2022; Pyrko et al., 2017; Roberts, 2006).

### **2.2.2. Characteristics of individual participants of Communities of Practice**

Participants of CoPs can be characterized as “...**people who share a concern**, a set of **problems**, or a **passion** about a topic” (Wenger et al., 2002, p. 4). Members of a CoP commit to learning and doing together, thus creating shared history which is the groundwork for their continued cooperation and activities (Lave & Wenger, 1991; Wenger, 1998) and turns the CoP into a living vault of knowledge (Wenger et al., 2002). Additionally, all community members **share the duty to enable learning** (Rogers, 2000).

CoPs are generally comprised of **old-timers** that make up the core community and additional **peripheral participants** who either 1) aim to become an old-timer, or 2) are content with a lesser degree of participation (Beane, 2019). **Newcomers** are initially peripheral participants capable of bringing knowledge (Farnsworth et al., 2016; Lave & Wenger, 1991; Pyrko et al., 2017) and novel views into the CoP when entering (Brooks et al., 2020). Old-timers enable new participants to learn and grow (Wenger, 2000; Wenger et al., 2002),

especially in a ‘master-apprentice’ relationship. These relationships create favourable conditions for new participants to critically look, reflect and develop their practices (Dörfler & Eden, 2019; Roan & Rooney, 2006; Stierand, 2015). Peripheral participants who acquire knowledge can transition into old-timers (Wenger, 1998). The changing identities and individuals of a CoP contribute to the CoPs changeable nature.

### ***2.2.3. Cultivating Communities of Practice***

The success of CoPs hinges on the number of practices it develops and shares because this enables the performance of the organisation and individual participants to improve (Hemmasi & Csanda, 2009; Probst & Borzillo, 2008). However, knowledge cannot be simply acquired, reproduced, or transferred between people. **Thinking together about knowledge, sharing ideas, and sharing the lived knowledge of practices** is needed to achieve mutual engagement and knowledge sharing (Iverson & McPhee, 2008; Pyrko et al., 2017; Wenger et al., 2002). Although CoPs were assumed to be flexible and informal, Wenger et al. (2002) noted early on that organisations can nurture CoPs intentionally. However, setting up a CoPs as a formal team structure in an organisation is not enough to get them to work (Iverson & McPhee, 2008).

Before a CoP can be cultivated, praised, and encouraged, members must share lived experience of and participate together in practice (Iverson & McPhee, 2008; Wenger et al., 2002). CoP cultivation requires time and resources, without their allocation and the removal of barriers to their function and promotion, participation in a CoP can be sparse (Wenger et al., 2002). A lack of resources and time thus relegates participation in a CoP to a fringe activity members scarcely engage in. Handley (2006) stresses participants in a CoP continually need navigate and address strain that occurs between their participation in the CoP and other roles in the organisation. However, just allocating these resources is not enough either (Wenger et al., 2002). Managers cannot unilaterally decide to create CoPs, mandate policy changes, or allocate time that needs to be spent on social interaction. This can hamper the development of practices especially if spending time together is perceived as being forced (Iverson & McPhee, 2008). In short, CoPs enable learning to happen through participation and collaboration in activities but are difficult to cultivate.

### ***2.2.4. Communities of Practice in post-industrial organisations***

Organisations need to actively create, cultivate, change, and share the knowledge its members possess to tackle rapid changes in the environment (Sánchez-Cardona et al., 2012; Zboralski et al., 2006). CoPs can act as agents of change (Saint-Onge & Wallace, 2003) that influence social and technical structures and internal values and regulations in an organisation (Sánchez-



Cardona et al., 2012). However, whether CoPs are present in PIOs is unclear as the characteristics of PIOs and IOs differ and concept of CoPs is derived from research in IOs (Nicolini et al., 2022).

IOs and PIOs offer different business offerings and have different workplace and employment conditions those in IOs on whose workplace the theory of CoPs is based (e.g. Amin & Roberts, 2008; Fuller & Unwin, 2004; Myers, 2022; Nicolini et al., 2022). CoP requirements in IOs are having established connectivity and planned learning moments in place although it is not required for members of the organisation to always be present on the same location at work (Hatch & Cunliffe, 2013; Lave & Wenger, 1991). Contrary to IOs, work in PIOs can be done completely by telecommuting or a hybrid approach. No physical proximity is required to work in the same organisation (Hatch & Cunliffe, 2013). Long-term knowledge and practice sharing in CoPs (Lave & Wenger, 1991; Wenger et al., 2002) and long-term alliance building and sustained commitment-based participation (Nicolini et al., 2022) clash with the rapidly changing business environment PIOs operate in (Harvey et al., 2013; Nicolini et al., 2022; Pyrko et al., 2017; Roberts, 2006). However, the self-governing nature of CoPs (Pyrko et al., 2017; Wenger, 2000) does not fully resist attempts to manage CoPs by allocating time and resources (Wenger et al., 2002). However, management decisions that forces CoP members to spend time together and adhere to routines and time constraints of the organisation can cause feelings of resentment. This hampers the development of new practices in a CoP (Iverson & McPhee, 2008). This can conflict with the tendency of PIOs to actively formalise unregulated activities like experiments, reducing the potential self-governance of these activities (Hatch & Cunliffe, 2013). The three issues described above, show possible incompatibilities of having CoPs in the organisational structure of PIOs. However, Hougard (2009) notes that CoP identification depends mostly on intuition. CoPs are about more than the structure in which learning occurs as they expand on how learning happens in organisations through working (Lave & Wenger, 1991), how informal communities in organisations influence learning (Brown & Duguid, 1991; Lave & Wenger, 1991) and what abilities these communities have to create, share and use knowledge in a way that benefits the organisation (Retna & Tee Ng, 2011). Thinking together about knowledge, sharing ideas, and sharing the lived knowledge of practice leads to mutual engagement and knowledge sharing in a CoP (Iverson & McPhee, 2008; Pyrko et al., 2017; Wenger et al., 2002). In IOs, CoP success constitutes the number of practices developed by communities (Hemmasi & Csanda, 2009; Probst & Borzillo, 2008). In comparison to IOs, a PIO is completely dependent on its organisational and human capital (Meyer et al., 2014) which are needed to provide the core business of offering of exchanging

knowledge (Bell, 1976; Cohen & Zysman, 1987). The craft of offering and exchanging knowledge may not be tangible or necessarily even generate tangible outcomes, but it does constitute a business practice which defines PIOs. The following hypothesis is proposed regarding the concept of CoPs being present in PIOs: *HI-CoPs are present in post-industrial organisations where members of the organisation work predominantly hybrid or online.* As to whether reflection occurs through a CoP in contemporary PIOs is an additional part of the research topic, the concept of reflective practices will be examined in the next section.

### **2.3. Reflective Practices**

Reflective practices are “...the actual way in which reflection is manifested through individual and collective action within the organisational realm” (Hildén & Tikkamäki, 2013, p. 82). Reflecting on actions can embolden people to initiate change. Additionally, critically looking at practices and taking action on any deficiencies alleviates an individual’s indifference towards change (Page & Meerabeau, 2000). Reflection enhances the understanding an employee has of the usual processes that occur within the organisation. Moreover, it provides a designated moment to explore “...the shared, collective assumptions and expectations, as well as the institutionalized rules and routines” (Hildén & Tikkamäki, 2013, p. 82).

Members of an organisation capable of reflection can critically look at their practical experiences. Furthermore, reflecting together can dispel any vagueness regarding the organisation’s business practices, how learning occurs in the organisation, and how management functions. Additionally, reflection makes clear which learning processes are important in the organisation and to what degree (Tikkamäki & Hildén, 2014). Sharing experiences and insights gleaned from individual and group reflection is useful. Accrued insights from reflection enable knowledge creation, best practice creation and learning (Knipfer et al., 2013). Continuous learning and the adoption of new knowledge in practice in an organisation is better facilitated when tacit knowledge is made explicit (Helyer, 2015; Hildén & Tikkamäki, 2013; Knipfer et al., 2013).

#### ***2.3.1. Reflective practices by individuals and groups***

Reflective practices can be exhibited both by **individuals** as well as **groups** of people in organisations (e.g. Akella et al., 2021; Hildén & Tikkamäki, 2013; Knipfer et al., 2013; Van Woerkom et al., 2002). Individual reflection helps a person learn from their experiences gained in practice. However, knowledge creation in the organisation comes from work-based learning and is the result of collaborative reflection where participants share knowledge and learn through discussions (Gray, 2011). Reflecting together can create new shared practices and

knowledge (Cundill et al., 2015; Wenger et al., 2002). Moreover, Wilson (2008) notes that reflection on the past, present or future can also incite change in an organisation.

Table 3. Reflective practices exhibited on an individual level, group level and both levels

<b>Reflective practice</b>	<b>Description</b>	<b>Level</b>
<i>Reflecting in-action</i>	An individual or group reflects on the activity when it takes place, this can lead to a change in the activity itself or regarding its circumstances.	Individual, group
<i>Reflecting on-action</i>	An individual or group reflects on an activity after it has ended, aimed at assessing and reflecting upon what happened during the activity and why.	Individual, group
<i>Reflecting on the future</i>	An individual or group reflects on the future to avoid limiting development by only looking to the past or current situations or activities.	Individual, group
<i>Reflecting on the past</i>	An individual or group reflects on past experiences to assess and change current happenings.	Individual, group
<i>Experimenting</i>	Individually or collectively testing various ways of working.	Individual, group
<i>Critical opinion-sharing</i>	An individual conveys their beliefs, knowledge and ideas to a group and asks group members critical questions about the organisation.	Group
<i>Challenging groupthink</i>	An individual voices disagreement in a group despite the rest of the group being in collective agreement.	Group
<i>Asking for feedback</i>	An individual instigates a dialogue to receive feedback from others.	Group
<i>Participating in discussions</i>	An individual participates in discussions regarding everyday issues, experiences, or mistakes which are openly addressed and debated together.	Group

Sources: Argyris and Schön (1996); Prilla et al. (2020); Reynolds (1998); Schön (1987); Van Woerkom and Croon (2008); Vince (2002); and Wilson (2008)

To summarise, individual reflection leads to less in-depth reflection than reflecting together in a group. Table 3 provides an overview of reflective practices exhibited on individual, group or both levels.

### 2.3.2. *Conditions required for reflective practice to occur*

To learn from reflection on both an individual as well as group level, several conditions need to be fulfilled. These conditions are shown in table 4.

Table 4. *Conditions for reflection to occur*

<b>Condition</b>	<b>Description</b>
<i>Reflective capacity</i>	Individuals want, can and ask constructive questions for which open-mindedness is required
<i>Reflective dialogue</i>	Unveils fundamental beliefs of individuals and establishes common ground and understanding
<i>Reflective experiments</i>	Provides space for reflection on previous attempts to integrate learning in the organisation
<i>Reflective management control</i>	Concerns management to oversee and promote solid commitment and trust to partaking in reflective practices

Sources: Boud (2010); and Hildén and Tikkamäki (2013); Tikkamäki and Hildén (2014); (Tsang, 2007)

Factors that actively hinder or help the ability of members of an organisation to partake in collaborative reflection are “...the **workload**, the **rhythm of work**, the **amount of individual versus team/group work**, as well as the **organisation and culture of daily meetings**” (Tikkamäki & Hildén, 2014, p. 298). Additionally, being in **different locations** significantly impedes the ability to engage in reflection in groups (Prilla et al., 2020). In summary, for reflective practices to bolster learning in organisations having capacity, dialogues, experiments, and management control over reflective practices is key and the way the organisation is set up will help or hinder reflection taking place.

The ability to reflect is a necessary skill for members of an organisation (Brownhill, 2022) as it helps organisation to tackle dramatic changes in its business environment that affect the relationship between employees and their environment (Billett & Hodge, 2016). Middleton (2017) endorses this by noting that reflection is paramount for being able to adapt, develop and advance. Furthermore, being capable of handling the increasing pressure to be competitive, capable, and skilled in using the available knowledge in the workplace is required by an employee to remain competitive (Hildén & Tikkamäki, 2013; Scott, 2015). Organisations that have little time and resources benefit from reflection as it is an intervention tactic capable of making a long-lasting, significant impact on the organisation without making huge changes in the organisational structure (Faller et al., 2020).

### ***2.3.3. Reflective practices in Communities of Practice***

Members of an organisation need to be able to reflect (Brownhill, 2022). Reflection makes tacit knowledge explicit and enhances continuous learning and the adoption of new knowledge in organisations (Helyer, 2015; Hildén & Tikkamäki, 2013; Knipfer et al., 2013). Moreover, dramatic changes in the organisational environment can be addressed with reflection (Billett & Hodge, 2016). CoPs are identified as spaces that are especially well suited for reflection to take place due to their focus on collective dialogue and learning from each other (Akella et al., 2021).

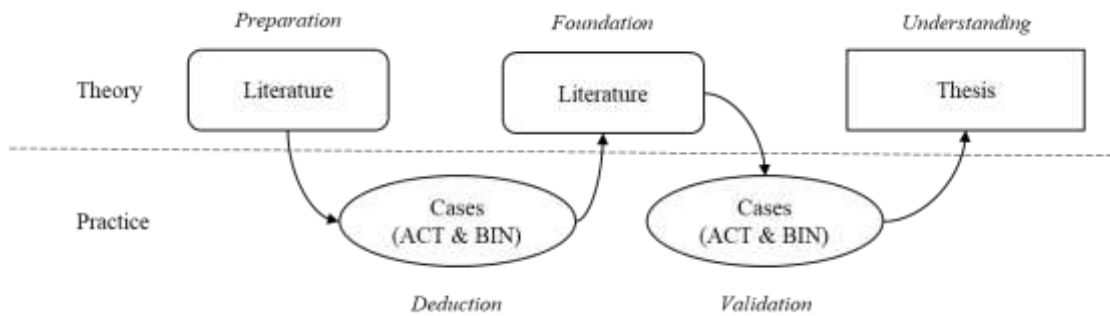
CoP requirements for being present and effective in organisations are similar to those that need to be met for reflective practices to take place. Both require the presence of activities or instances that provide space for experimentation and learning (Hildén & Tikkamäki, 2013; Tsang, 2007; Wenger, 2000), the presence of helpful group relationships to share knowledge and reflect, and the allocation of sufficient time and resources (Boud, 2010; Tikkamäki & Hildén, 2014; Wenger et al., 2002). However, reflection can occur regardless of the presence of a CoP in an organisation as individuals can reflect on experiences alone (e.g. Akella et al., 2021; Hildén & Tikkamäki, 2013; Knipfer et al., 2013; Van Woerkom et al., 2002) although reflecting solo is less beneficial than reflecting in a group (Gray, 2011). Finally, reflection on work practices is at the heart of work-based learning (Gray, 2011; Schön, 1987). Reflective practices are required to have fruitful learning processes in an organisation (Carroll, 2010; Fergusson, 2022; Tikkamäki & Hildén, 2014) regardless of whether reflection happens on individual or group level. The second hypothesis in this research derived from the considerations described above reads as follows: *H2 – The presence of a CoP in a post-industrial organisation initiates reflection on both an individual and group level.*

## **3. Methodology**

### **3.1. Research Design**

This research aims to examine if CoPs are present in- contemporary post-industrial organisations whose members work predominantly in a hybrid or online setting. The research method chosen is qualitative in nature, namely the exploratory holistic multi-case study. A case study is appropriate as it enables the examination of the dynamics that take place in a distinctive setting (Eisenhardt, 1989), facilitate analytical generalisation (Robson, 2002) and allow for the examination of the phenomenon in its real-world context without manipulating relevant behaviours (Yin, 2014, 2018). Additionally, previous research and academic theory about CoPs in the distinctive setting of a PIOs is limited which leads to a fragmented view on the

phenomenon and means little is known about it. A multi-case study method is considered the optimal approach in these circumstances (Eisenhardt, 1989; Yin, 2017). Moreover, multi case-studies enable the building of a theory that is more generalizable, precise, and straightforward (Eisenhardt, 1989; Gehman et al., 2018). To construct a theory, information gathering on the context and concepts related to the subject of study - and connections between them - takes place. This iterative process is schematically depicted in Figure 1.



*Figure 1. Simplified depiction of the iterative process. Based on Eisenhardt (1989); and Glaser and Strauss (1967).*

The iterative process in this research alternated between gathering information from literature, conducting interviews, and examining the phenomenon in the real word, before returning to the literature to further examine and complement the findings until a comprehensive insight was developed (Eisenhardt, 1989; Glaser & Strauss, 1967).

### **3.2. Research Setting**

For case study selection, replication logic sampling was used (Yin, 2014). Since the selection of the cases takes place according to the prediction of similarities between case studies, this approach is appropriate. Preliminary exploratory research into the cases indicates that both cases to be examined in this research are conducive to informal collaboration within their employer’s organisation, due to the nature of the organisation itself. Additionally, the preliminary findings suggest that these organisations are PIOs as employees in both organisations are working for customers outside of their organisational environment offering advice/consultancy services. Moreover, employees were described as working hybrid and online a lot. Below, a brief description is given on each case organisation. The company names depicted are fictional, see section 3.5 Research ethics for details.

#### **3.2.1. Case 1**

AGlobal Consultants is located in the Netherlands and focusses on solving complex questions surrounding business processes and management for public and private organisations. The

preliminary conversations with a representative made clear that it is a small company with less than fifty employees. Employees are almost all sent out to work on projects, the formal structure of the company thus aims more to support employees than serving as a primary place of business. It was said that the organisation has a formal chain of command structure but an informal culture in the workplace. Its headquarters comprises a shared workplace that employees can use although it is infrequently used by members of the organisation in their day-to-day working life. Communication within the organisation is predominantly conducted online or by telephone, this is similar for customers although working on the customer location is also prevalent.

### **3.2.2. Case 2**

BeInfo Consultants is a consultancy and advice business located in the Netherlands that advises on a plethora of topics related to sustainability whose services are tailored to both public and private customers. The preliminary conversations with a contact of the organisation made clear that it is a small company with less than 50 employees. Members of the organisation can work for on business operations in the company or customers online, or in the workplace of the employer or customer. The organisational hierarchy was described as flat with an informal culture. Its headquarters comprises a shared workplace that employees can use, and employees make regular use of it in their day-to-day working life. Communication within the organisation takes place online or by telephone as well as in the workplace. Communication with the customer commences online, by telephone, or on location.

### **3.3. Data Collection**

Both cases were examined using multiple data sources, namely: semi-structured interview transcripts and documentary evidence. Data was collected from April 2023 until August 2023. The different types of data gathered during this period allow for data triangulation to happen and make it possible to view the subject through different lenses, strengthening case study construct validity (Yin, 2014). Research reliability was further reinforced while the semi-structured interview format did allow for plenty of natural conversation to occur, it also ensured the basic questions were asked in every interview, making it easier to replicate them (Bleijenbergh, 2015). For both cases, semi-structured interviews were conducted with employees of the organisations, their goal was to acquire insight in 1) the PIO characteristics and 2) CoP characteristics present in the organisation, as well as 3) how reflective practices take place in the organisation. In both cases potential interview participants were identified and asked for participation by company representatives. No formal role requirements were

formulated for employees to participate in interviews; any member of the organisation who was willing to participate in the interview was interviewed.

On average, the interview duration was thirty minutes. Apart from ACT5, all interviews for AGlobal consultants were conducted through Microsoft Teams. All other interviews, those of ACT5 and BeInfo Consultants, were conducted on location. Appendix A contains the interview protocol which was used to conduct the interviews. Table 5 provides a clear overview of the data sources and methods that were used for each case to strengthen research reliability and replicability through transparency.

Table 5. Case and data overview

Case	Source	Type	Number	Description & details		
<i>AGlobal Consultants</i>	Primary	Interview	7	<i>Code</i>	<i>Duration (min)</i>	<i>With</i>
				ACT1	29	Employee
				ACT2	37	Employee
				ACT3	32	Employee
				ACT4	45	Employee
				ACT5	32	Employer
				ACT6	41	Employee
	ACT7	30	Employee			
Secondary	Documents	2	Website documents Social media page			
<i>BeInfo Consultants</i>	Primary	Interview	5	<i>Code</i>	<i>Duration (min)</i>	<i>With</i>
				BIN1	40	Employee
				BIN2	30	Employee
				BIN3	42	Employee
				BIN4	35	Employee
	BIN5	20	Employee			
	Secondary	Documents	9	Website documents Social media page Year report 2021-2022 Year report 2022-2023 Company internal written message Company internal email message Company internal memo Core value poster 1 Core value poster 2		

### 3.4. Data Analysis

Data analysis in this research took place alongside the data collection phase due to the exploratory nature of this research. The collected interview data per case was transcribed and



placed in a case database (Yin, 2018). This allowed for linkages to be identified between the collected interview data and the documentary evidence. A thematic coding approach was chosen as it aids in the search and identification of coding of patterns that describe the phenomenon under investigation (Braun & Clarke, 2013; Fereday & Muir-Cochrane, 2006). The thematic analysis was carried out using a hybrid approach to coding by combining deductive, theory based a priori codes with inductive, data-driven posteriori codes that emerged from the data (Swain, 2018). This suits the research topic which is focussed on applying existing notions on a new setting, while keeping an open mind to other themes in the data. The data sources were thoroughly coded to ensure the findings could be used to serve as a cornerstone for further theory building and development (Glaser & Strauss, 1967). After coding was finished, code trees were constructed to show the interplay between codes (Appendix B). From the analysis, a case description for both cases was created, a review of the theoretical framework was conducted, and the findings were synthesized.

### **3.5. Research Ethics**

The guiding principles and standards prescribed by and outlined in the Netherlands Code of Conduct for Research Integrity (2018) for researchers are adhered to in this research. Bos (2020) details crucial and decisive imperatives for research, this includes an emphasize on interacting respectfully with persons involved in the study, the protection of confidentiality and the avoidance of deception of participants. Both the company representatives and participating employees received a consent form before participating (Appendix C) detailing the topic of the study, the rights of and agreements made with the participant, and the methods of data collection. Participant confidentiality is safeguarded as interview transcripts are anonymized. Additionally, in response to hesitation on this topic by the participating organisations, the initiative was taken to exclude identifying information and company names from the research report. as well as their names from the research report. Furthermore, all interviewees received a transcript of their interview on which they were free to comment, the outcome of the study will also be shared after conclusion of the research. Finally, a possible conflict of interest must be mentioned and made clear, namely the researcher has professional ties to case 1.

## 4. Findings

### 4.1. Case 1

#### 4.1.1. *Post-industrial organisation characteristics*

AGlobal Consultants exhibits characteristics associated with a PIO. The social structure of the organisation is based on delegation of authority as employees are involved in business operations (ACT4; ACT6; ACT7). Furthermore, the organisation has a flat organisational structure (ACT5; ACT7) without divisions or departments (ACTWB). Although no regulated work experiments were identified, interviewee ACT5 mentioned there are formalised information gathering activities (e.g., knowledge nights and office days). The organisation promotes autonomy (ACTWB; ACT4; ACT5; ACT6) in its employees but no examples of the promotion of creativity was identified. The physical structure of the company allows employees to link to distant places as they work on the customer site (ACT1; ACT5; ACT6; ACT7) or customers abroad (ACTWB). The product offering is knowledge (ACTWB; ACTSM) rooted in the expertise of the employees (ACT6). The nature of work of the organisation is such that employees telecommute extensively (ACT1; ACT2; ACT4; ACT5; ACT6; ACT7). Furthermore, continuous learning is promoted (ACTWB). Other notable trends found in the data regarding nature of work characteristics of the organisation include learning by doing as being the prevailing way of learning in the organisation (ACT2; ACT3; ACT4; ACT6) although what they learn is different as employees have different clients with varying needs and questions and thus topics to work on (ACT1; ACT3; ACT4).

Traits not pre-defined by literature but which emerged from the data were also found. Regarding the social structure of the company this includes paying significant attention to individuals (ACTWB) and personal development (ACT5). Having close interpersonal connections (ACT6) between employees forged by participating in informal, non-work-related activities (e.g., ski-trip; ACT3; ACT5) while the connection with the customer is more formal (ACT1; ACT4; ACT6; ACT7). Other notable physical structure traits include employees working frequently in the customers' office (ACT2; ACT5; ACT6) and barely in the employer's office (ACT2; ACT4). Distance between employees is keenly felt as a negative influence (ACT1; ACT3; ACT4) on sharing information (ACT2; ACT4), forging connections (ACT2), having informal conversations and reflecting together (ACT5) which an online meeting can't facilitate (ACT3). Traits found in the data regarding the nature of work in the organisation included learning by doing as the prevailing way of learning in the organisation (ACT2; ACT3;

ACT4; ACT6) although the knowledge gained differs as the needs of the client dictates what is required (ACT1; ACT3; ACT4).

#### ***4.1.2. Communities of Practice characteristics***

The boundary characteristics of a clear community leader and a long-term connection with the organisation were not described by the interviewees nor in the documentary evidence. Additionally, only one contemporary community artifact was identified (ACT5). Interviewee ACT3 described a cycle of participant renewal taking place in the organisation. Moreover, a decent level of connectivity between employees within the organisation is established as help is offered freely (ACT1), employees are in regular contact (ACT4; ACT7) and some meet often (ACT5). Drawbacks are the diverse topics employees are concerned with which causes people to retreat in their own “bubble” (ACT4) thus initiating a feeling interviewee ACT7 described as the organisation being made up of “loose grains of sand”. Furthermore, establishing a topic repertoire (ACT6) and connection (ACT4) which works for all employees has proved to be challenging (ACT4), made worse by physical distance (ACT1; ACT5). However, there are clear learning instances established such as the knowledge night (ACT1; ACT2; ACT3; ACT4; ACT5; ACT7), office day (ACT5; ACT6) and evaluation conversations (ACT5).

Individuals in the organisation exhibited traits of being a CoP participant. These included employees being held responsible for organising knowledge sharing sessions (ACT3), presenting knowledge (ACT4) and the duty to make sure all can learn from what is shared (ACT7). Furthermore, there are employees who can be characterised as peripheral participants as they do participate in knowledge sharing but do not organise sessions (ACT4) nor volunteer new initiatives (ACT6). One interviewee noted that there are relative newcomers in the organisation (ACT3) as well as old-timers who act as coaches for newcomers (ACT5; ACT7). Employees described the same interests (ACT1; ACT2; ACT3) but mentioned no shared concerns, passions, or problems. Employees experience organisational support to share knowledge (ACT1; ACT3; ACT4) especially within initiatives with this goal already present in the company (ACT6) and formal training (ACT4). However, sharing knowledge in general was found to be difficult due to a lack of allocated time (ACT1; ACT2; ACT3; ACT4; ACT5) and resources (ACT1; ACT4; ACT6), although others were content with the time (ACT6) and resources (ACT2). Some interviewees felt that low organisational support for meeting more often at the office of the employer aggravates the existing difficulties with knowledge sharing (ACT1; ACT6).

Shared activities in the organisation mainly concerned sharing experiences of practice (ACT1; ACT2; ACT3; ACT4; ACT5; ACT6; ACT7) and sharing knowledge (ACT3; ACT4; ACT5; ACT6) while thinking together (ACT2) sharing ideas (ACT2; ACT5), developing shared practice (ACT2; ACT3; ACT5) are uncommon. Employees initiate what is shared in the organisation and govern this process themselves (ACT2; ACT3; ACT4; ACT6) in an informal organisational culture (ACT1; ACT2; ACT3; ACT4; ACT5; ACT7). Organised activities include group meetings (ACT1; ACT5) and one-on-one meetings (ACT7). However, from the data emerged the notion that a lack of initiative by employees has a negative effect on learning in the organisation (ACT1; ACT7) which is caused by a long travel distance and lack of priority due to personal circumstances (ACT2; ACT5) despite employees being aware of the advantages of participation (ACT2).

#### ***4.1.3. Reflective practices***

None of the interviewees nor the documentary evidence noted any instances of negative management control. Moreover, only one positive instance was noted, namely having a fixed daily meeting culture (ACT3). However, themes emerged from the data regarding management control which illustrated formal learning instances (ACT1; ACT2; ACT5) where reflection is ingrained in the goal and organisation of the activity (ACT7) can be organised by management (ACT4; ACT6). Employees further desire more management control in structuring the daily meeting regime (ACT1; ACT3), the allocation of time and resources (ACT1) and reflection (ACT4; ACT6) and follow up sessions (ACT7). Some employees noted they are unwilling to ask constructive questions as they perceive a lack of openness to critique (ACT3; ACT5) and are reluctant to share negative opinions (ACT3) or reflections (ACT5). However, some did perceive the environment to be open to constructive questions (ACT5). Common ground was established by talking about personal matters (ACT5). Furthermore, common understanding was enhanced by discussions about changes for and happenings in the organisation (ACT2; ACT5) although the lack of topics relevant for all participants hampers common understanding (ACT3; ACT4; ACT7) Although post reflection change was said to happen (ACT5), shared practices created because of reflection were not mentioned.

Individual reflection that occurred concerned reflecting on the future (ACT2; ACT5; ACT7) and the past (ACT5; ACT6) with reflecting on-action being the most prevalent (ACT2; ACT4; ACT5; ACT6). Collaborative reflection on the future (ACT1; ACT2; ACT4; ACT5; ACT6) and on-action (ACT2, ACT3, ACT5; ACT7) occur although here reflection on the present is the most prevalent (ACT1; ACT2; ACT3; ACT5; ACT6). Additionally, reflection in groups

was characterised by the sharing of critical opinions (ACT5) and giving feedback (ACT4, ACT5, ACT6). Finally, an in-between method of reflection emerged from the data, namely reflecting one-on-one in evaluation (ACT5) and coaching conversations (ACT6).

## 4.2. Case 2

### 4.2.1. *Post-industrial organisation characteristics*

BeInfo Consultants exhibits characteristics associated with a PIO. The social structure of the organisation delegates authority and the organisation is the sum of all its employees (BINY1) who work on business operations or projects (BIN1; BIN2; BINY1) and share the responsibility for the company (BIN1; BIN5). Furthermore, the organisation has a flat structure (BIN1; BIN3; BIN4, BIN5; BINY2). Two regulated experiments were identified, namely working together on planning next week's activities (BIN4) and participating in an organisational culture assessment (BINY1). Additionally, two regulated information-gathering activities were identified namely, a shared session on Friday mornings to share information, current happenings, announcements, and experiences (BIN1; BIN4; BIN5) and employee evaluations (BIN1). The organisation promotes autonomy by supporting entrepreneurship (BINWB) and encouraging proactive behaviour (BINWM). Creativity is expected (BINY1) and promoted (BIN1; BIN3). The physical structure of the company has links to international and far away locations (BINY1) and employees are connected to multiple customers or parties (BIN5). The organisation offers knowledge through advice, courses, and workshops (BINWB; BINY1). The nature of work in the organisation is such that employees telecommute regularly (BIN1; BIN2; BIN3; BIN4; BIN5). Furthermore, the organisation focuses on continuous learning by safeguarding the personal development of employees (BINWM) who are skilled (BINY1) knowledge holders (BINY1; BINY2).

Traits not pre-defined by literature but that emerged from the data were also found. Regarding the social structure of the company, this includes having an eye for individuals and looking at their qualities (BIN1). Additionally, there are clear expectations for employees on what results they need to provide (BIN4) and what responsibilities they have (BINC1). Personal connections in the company are aimed at knowing what viewpoints other employees have and what they find important (BIN1; BIN4). The connection between an employee and a customer is often more hierarchical (BIN4) and superficial (BIN1), though also friendly (BIN2). Finally, by working with the customer, both the employee and the customer improve (BIN3) by thinking together (BINC1). Other traits include a physical structure including employees being present for longer periods of time at the location of the customer (BIN1; BIN2; BIN4). However,

employees work at the customer, employer, and other locations as well (BIN1; BIN3). Working in physical proximity is a positive experience (BIN3), especially for sharing knowledge when occurring at the employer's location (BIN2). The only negative found concerns working remotely during the Covid-19 pandemic which was experienced as being difficult (BINY1). Traits that emerged from data regarding the nature of work include a focus by the organisation on knowledge and skills (BINY1). Furthermore, learning by doing emerged as the main way of learning identified by employees as new employees are “thrown into the deep end” (BIN1; BIN4) to see how they “swim” with initially minimal help (BIN1; BIN2).

#### ***4.2.2. Communities of Practice characteristics***

The organisation has community leaders who are part of the project board. They aim to connect individuals by preparing and leading the Friday sessions (BIN1; BIN4). Furthermore, the company has a long-lasting and established network of connections (BINY1), present ever since its inception (BIN1). A contemporary community artefact was identified which concerns a needs assessment (BINWM) to gain insight into the wishes for the development of individuals within the organisation and this overview is frequently shared (BINEM). There is a clear cycle of participant renewal in the company with new people entering (BIN1; BIN3; BINY1; BINY2) and employees leaving (BINY1; BINY2). Furthermore, a buddy system is present where the medior and senior level employees take juniors under their wings to help them get started on projects and explain the internal workings of the company (BIN1; BINY1). Contact between colleagues in the organisation is well established (BIN2; BIN3) and employees contact each other frequently (BIN5) to share tales (BIN4). However, moments with lower connectivity that hamper learning (BIN1) and knowledge sharing (BIN2) include the decrease of participation of medior and senior employees in project discussions (BIN2). There are established learning instances in the organisation such as the Friday session (BIN1; BIN2; BIN4; BIN5), project discussion (BIN1; BINWM; BINEM, and core value workshops (BIN4).

Individuals in the organisation exhibited traits of being CoP participants. This includes employees having the duty to enable learning for others in the organisation (BIN1; BIN3; BINY1). There are employees who act as peripheral participants (BIN2; BINY1). Furthermore, the organisation has newcomers (BIN2; BIN4; BINY1; BINY2) and old-timers who are medior or senior employees. The latter act as buddies (BIN1) for newcomers by providing basic training (BIN3). The main motivations described by employees to participate in knowledge sharing are a shared concern (BINY1) and a shared passion (BIN1; BINWB; BINY1; BINY2), no remarks were made specifically regarding shared interests or problems. One instance of

insufficient time allocation was noted by an interviewee (BIN4), and no explicit positive remarks were made noted. Furthermore, interviewee BIN3 remarked on receiving sufficient resources (e.g., funding) and no remarks regarding insufficient resource allocations were noted. Employees experience high organisational support in response to suggestions and ideas (BIN1; BIN3) and feel invited to share knowledge (BIN4).

In shared activities in the organisation the most common activities are sharing experiences of practice (BIN1; BIN3; BIN4), sharing ideas (BIN1; BIN3) and thinking together (BIN1; BIN4; BIN5). The root of participation in knowledge sharing is ambiguous. The project board makes decisions on knowledge sharing in group settings (BIN3) and employees are proactive in sharing knowledge (BIN1; BIN3), voluntarily participate in knowledge-sharing activities (BIN1; BIN3; BIN4; BIN5) and experience the organisation as being informal in nature (BIN3; BIN4; BIN5). However, elements derived from the data hint at a lack of initiative by employees to uphold knowledge sharing (BIN3) and a lack of participation regarding project discussions where participation of medior and senior employees decreased (BIN1).

#### ***4.2.3. Reflective practices***

One instance of negative management control was identified, namely working individually which restricts reflection in groups (BIN4). In contrast, one positive aspect was identified which is the presence of a daily meeting culture chaired by a person who organises these meetings (BIN3; BIN4). In this case, themes emerged from the data regarding management control which illustrated that the rhythm of work with people in the office is helpful (BIN4). Additionally, explicit promotion by the organisation occurs through the needs assessment (BINMO and individual evaluations of employees (BIN1). Formally organised reflection activities are present (BIN1; BIN3), although a lack of guidelines on what knowledge is useful to share is lacking (BIN3). Other instances where reflection occurs are sessions with external people in workshops (BIN1; BIN4), in courses (BIN2; BIN3; BINEM), company culture assessments (BIN1), project discussions (BIN1, BIN3, BINEM) and the Friday sessions (BIN4).

In terms of reflective capacity in the organisation, one employee observed feeling insecure in asking constructive questions to their environment (BIN2), although other employees experience the environment as being open (BIN1; BINY1) and are willing to ask constructive questions (BIN1; BIN3) which is appreciated and encouraged (BINY1; BINWM). Reflective dialogues take place in the organisation, although difficulties in finding common ground makes learning in a group difficult (BIN1). Furthermore, reaching a common understanding was easier for some (BIN4) than others (BIN1; BIN2). No reflective experiments

were identified in the data. Post-reflective change occurred in the organisation by restructuring the organisational hierarchy (BIN1) as well as on an individual level by revising what is needed by whom (BIN1; BIN4). Further examples of shared knowledge were not identified.

Reflection by an individual that took place was mainly concerned with reflecting on the past (BIN2), on the present (BIN1; BIN4) and on action (BIN1). Collaborative reflection concerned reflection on the future (BIN1; BIN3; BIN5), reflecting on action (BIN1; BIN3; BIN5) although reflecting on the present is the most prevalent (BIN1; BIN3; BIN4; BIN5). An in-between method of reflecting was found in the data, namely reflecting one-on-one (BIN1; BIN3). Finally, reflection occurred also through the sharing of critical opinions in a group and giving feedback (BIN4; BIN5) as well as participating in discussions (BIN1; BIN4).

### **4.3. Synthesis**

Both AGlobal Consultants and BeInfo Consultants display characteristics of being a PIO. For the most part, these characteristics are similar although there are differences. For AGlobal Consultants no regulated work experiences were identified, nor was the promotion of creativity at the same level as BeInfo Consultants. However, the most significant difference is the level to which telecommuting is prevalent in the organisation. Employees of AGlobal Consultants telecommute extensively and have a monthly meeting planned where employees return to the office. In comparison, employees at BeInfo Consultants spend more time in the office of the employer, regular meetings are planned on Fridays.

Regarding the exhibited CoP characteristics, AGlobal Consultants has a less defined structure with no specific leader, explicit long-term connections and community artefacts as BeInfo Consultants has. However, both cases display a cycle of participant renewal and a decent level of connectivity although this is adversely affected by the variety of topics relevant to work in the organisation. This is exacerbated for AGlobal Consultants due to physical distance between employees. In both cases, clear learning instances, arranged and managed by the organisation, are established. Individuals in both cases exhibited traits of being a CoP participant as individuals have a duty to enable learning for others and participate in participant renewal cycle with old-timers guiding newcomers in the organisation. However, in AGlobal Consultants the motivation to participate in knowledge sharing was a shared interest and no other reason, which differs from BeInfo Consultants where the main motivations are a shared concern and passion without any specific input on interests or problems. In both organisations employees experience support to share knowledge, however, within AGlobal Consultants a lack of allocated time and resources serve as barriers to sharing knowledge. Physical distance further



aggravates these difficulties around knowledge sharing. In comparison, employees of BeInfo Consultants did not experience a significant lack of allocated time or resources or issues with distance. In AGlobal Consultants, shared activities mostly revolved around sharing experiences of practice and sharing knowledge. While BeInfo Consultants also has shared activities revolving around experiences of practice, it also has activities focussed on sharing ideas and thinking together instead of knowledge sharing. Participation in activities more is governed by employees themselves in AGlobal Consultants employees. Both organisations have issues with a lack of initiative of employees due to physical distance and travel in AGlobal Consultants although for BeInfo Consultants no reason was identifiable.

Regarding reflective practices in the organisations, no negative or positive management control practices stood out in either case. However, in AGlobal Consultants more management control is desired to enable reflection to occur. Both cases had instances where a lack of common ground or understanding were apparent, mainly due to the variety of work topics relevant to work. Individual reflection focussed mainly on the future by AGlobal Consultants, on-action and the past for both, and the present for BeInfo Consultants. Collaborative reflection on the other hand focussed mostly on the future and the present for AGlobal Consultants whereas in BeInfo Consultants this shifted towards more focus on the future, on-action, and most of all present. In both cases the sharing of critical opinions and feedback was prevalent.

## **5. Discussion and implications**

Existing literature about PIOs indicated that these organisations typically have a flat, non-hierarchical social structure with a degree of formalisation to knowledge sharing activities, a physical structure scarcely confined to a location and knowledge as its product, as well as a nature of work based on skills of employees who make extensive use of telecommuting (Ford & Bowen, 2008; Hatch & Cunliffe, 2013; Huber, 1984; Meyer et al., 2017; Thompson et al., 2001). The findings of this research indicate that the examined organisations are in fact PIOs as they display the organisational characteristics typical for these organisations. However, a major difference between the cases was found. This concerns the difference in the level of adoption of fully online work employees are engaged in. AGlobal Consultants had less formalised knowledge sharing structures and a higher level of telecommuting which was experienced as disadvantageous by employees in relation to sharing knowledge in the organisation. This experience is not unique to this case as this effect was observed in relation to employees that telecommute extensively who experienced professional isolation (Cooper & Kurland, 2002) and a reduced sense of inclusion (Morganson et al., 2010). Telecommuting

communication methods cannot solve this. Face-to-face interactions remain the most powerful tool in maintaining connections between employees (Sias et al., 2012) and a higher frequency of these interactions benefits knowledge sharing (Golden & Raghuram, 2010).

Extant literature about CoPs describes them as being long-lasting, craft-based communities positioned largely outside of routines and time constraints of organisations (Lave & Wenger, 1991). In this context a CoP forgoes any requirements on people to be physically present in the same workplace to form a CoP (Cundill et al., 2015). Its structure in IOs is known to vary from being formal to informal (Farnsworth et al., 2016; Hemmasi & Csanda, 2009; Lave & Wenger, 1991; Probst & Borzillo, 2008; Sánchez-Cardona et al., 2012; Wenger et al., 2002). However, doubt was cast on the existence of CoPs in PIOs where members work predominantly or fully online (Amin & Roberts, 2008; Fuller & Unwin, 2004; Myers, 2022; Nicolini et al., 2022). The case findings in this research contribute to filling this gap as it shows that many of the organisational characteristics typical of CoPs in IOs are present in the examined PIOs. However, notable differences are a shift in focus from the creation of shared practice towards sharing knowledge by sharing experiences. In IOs CoP success is measured by the knowledge and number of practices it develops and shares (Hemmasi & Csanda, 2009; Probst & Borzillo, 2008) whereas the research findings shift the emphasis in the PIO organisations to mostly knowledge sharing. Furthermore, in BeInfo Consultants the formal cultivation of knowledge sharing in the PIO is experienced as being beneficial to practice. This corresponds with Amin and Roberts (2008) who noted that leveraging and cultivating CoPs in organisations reduces the focus on knowledge creation. In the cases, connectivity between employees was found to be adversely affected by the scope of the topics relevant to work in the organisation which was found to be exacerbated as physical distance is bigger. The findings support the notion that physical presence in the same workplace is not needed to form a CoP (Cundill et al., 2015) although it is beneficial factor in knowledge sharing in organisations that suffer from work topic dispersion (Jacobs, 2004; Nesheim & Gressgård, 2014). A final notable finding is the presence of an issue with CoP management. Cultivating a CoP requires time and resource allocation to remove barriers to their function and promotion (Wenger et al., 2002), otherwise participation can be scarce. This is exemplified by the situation within AGlobal Consultants where a lack of participation and initiative is caused by physical distance away from the office and extensive travel time to the office.

Existing literature on reflection notes that reflection aids the adoption of knowledge in practice while improving reflective skills aids workers in taking a critical look at their practical experiences (Helyer, 2015). Brownhill (2022) notes that the ability to reflect is a necessary skill

for individuals to assess and recognize what changes are needed as well as implement them in practice. The findings of this study illustrate that the presence of the CoP, and especially the cycle of participant renewal allows for reflection to take place, benefitting knowledge sharing and learning. This occurred on individual and group level although a lack of common ground and understanding due to the variety topic dispersion into the organisation made reflecting on content difficult for employees.

### ***5.1.1. Implications for science***

This study makes a foray in examining the way a CoP can present itself in a PIO and provides an indication on what characteristics of CoPs traditionally found in IOs are prevalent or absent in PIOs. This study thus contributes to science by addressing the doubts that surround the existence of CoPs in PIO organisations where members work predominantly online (Amin & Roberts, 2008; Fuller & Unwin, 2004; Myers, 2022; Nicolini et al., 2022). Additionally, the findings of this research also contribute by confirming extant literature on barriers to knowledge sharing in PIO organisations, chiefly the difficulties surrounding communication. The findings are a useful departure point for further research that focusses on knowledge sharing through CoPs in PIO organisations and cultivation of CoPs in PIO organisations.

The findings of this research are placed in the frame of two cases that constitute consultancy organisations. This study contributes to the conversation on perceived antipathy between management and employees (Rennstam & Kärreman, 2020), emerging distrust between consultants and management when the latter cultivate a CoP (Pastoors, 2007), as well as potential disharmony that emerges (Pemberton et al., 2007) by displaying a counter case where these traits were offset by the desire of employees to have management facilitate and support their knowledge sharing in the organisation.

### ***5.1.2. Implications for practice***

The findings of this research contribute to the understanding of PIO organisations on how knowledge management through CoPs can work in their organisations. It highlights possible difficulties that can be encountered in CoPs in PIOs. Furthermore, the findings of this study enable organisations to examine specific elements that have been identified as enablers or barriers to the cultivation of a CoP in PIOs which can help organisations address them to encourage positive elements and remove barriers to get knowledge creation and knowledge and practice sharing to occur in a PIO. Regarding reflection, organisations can learn from the findings of this study that indicate the benefits of having and cultivating a cycle of participant renewal in the organisation. Moreover, the study provides insight into what causes of a lack of

common ground or understanding can occur in the organisation, such as the variety of topics making reflection on the content difficult.

## **6. Conclusions, limitations, and future research**

The goal of this study was to explore how CoPs exist and employ reflective practices in PIOs whose members work predominantly hybrid or online. Supported by the literature review, this research hypothesised that CoPs are present in PIOs and that reflective practices in the setting of CoPs in this type of organisation supports knowledge sharing. To investigate these hypotheses, two cases of organisations work predominantly hybrid or online and where preliminary investigations indicated the organisations could qualify as a PIO, were selected, and examined.

The findings indicate that CoPs are present in PIOs although not all characteristics of CoPs derived from their characterisation in IOs were present in this context. Furthermore, in CoPs in PIOs a physical distance between members was observed and the larger that distance was the more detrimental to the ability to share knowledge this proved to be. To mitigate this effect careful, cultivation of the CoP by means of resource and time allocation are proposed to help. The findings also indicated that reflective practices aid knowledge sharing in PIO organisations and are employed on both an individual and collaborative level in the organisation by member of the CoP.

For this research, data collection took place by conducting semi-structured interviews and the gathering of documentary evidence. Investigating the two cases allowed for a careful examination of the phenomenon in their organisational context. However, there are limitations to this study. First, the number of two cases is not sufficient to infer firm statements on to what CoP characteristics that originated in IO organisations are consistently present in PIO organisations. Moreover, it is also an insufficient number to infer new CoP characteristics specific to CoPs in the PIO context. Therefore, additional research is needed with different cases to reexamine the conclusions made in this study. Second, despite the wealth of primary data, the interview data can be biased as interviewees comment on and share information about the past. Finally, no observations were done in this study. However, doing so could mitigate bias by interviewees as observations allow for the examination of practice in real time and is recommended to be conducted in future research. All in all, future research could do with a new and possibly bigger set of case studies where interviews, observations and documentary evidence gathering, and analysis can provide a more comprehensive and unbiased view on this topic.

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- [http://bvbr.bib-bvb.de:8991/F?func=service&doc\\_library=BVB01&doc\\_number=015146360&line\\_number=0001&func\\_code=DB\\_RECORDS&service\\_type=MEDIA](http://bvbr.bib-bvb.de:8991/F?func=service&doc_library=BVB01&doc_number=015146360&line_number=0001&func_code=DB_RECORDS&service_type=MEDIA)
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## Appendix A. Interview protocol

### Introduction

- Welcome the interviewee.
- Ask permission for making a recording of the interview and note taking.
- Start the recording when permission is obtained.
- Introduce the researcher to the interviewee by introducing the study program and university institute.
- Introduce the interview topic, interview goal and research goal.
- Reiterate that permission was granted to make a recording of the interview and notes.
- Inform the interviewee of the intended length of the interview (30min).
- Inform the interviewee that after conclusion of the interview an anonymised transcript of their interview will be shared where all data pertaining their identity or the identities of third parties are anonymised.
- Extend an invitation to the interviewee to make comments or ask questions after receiving their interview transcript and stress the researcher will address these.
- Notify the interviewee of where the interview data will be used for
- Notify the interviewee they are allowed to quit or pause the interview and ask questions at any time.
- Ask interviewee if there are any questions.

### Interview questions

In Dutch	English translations
Wat is de rol die jij vervult in de organisatie?	What is your role in the organisation?
Werk jij zowel voor de werkgever alsook een opdrachtgever?	Do you work for an employer as well as a client?
Hoeveel tijd werk je op locatie van de werkgever en hoeveel tijd werk je op afstand?	How much time do you work on location of your employer and how much form a distance?
Hoe vaak zie je collega's van de werkgeverswerkgeverorganisatie?	How often do you see colleagues of your employers' organisation?
Als je elkaar ziet, waar zie of spreek je elkaar dan?	If you see each other, where do you see or speak with one another?
Hoe is de relatie met collega's in de werkgeverswerkgeverorganisatie?	What is the relationship with colleagues in your employers' organisation like?
Is deze relatie naar tevredenheid?	Is this relationship to your satisfaction?
Wat voor manieren om te leren ken je bij je werkgeverorganisatie?	What ways to learn do you know of in your employers' organisation?
Tijdens welke activiteiten in de werkgeverorganisatie wordt kennis gedeeld?	During which activities in the employers' organisation is knowledge shared?
Tijdens welke activiteiten in de werkgeverorganisatie wordt gereflecteerd op kennis delen?	During which activities in the employers' organisation does reflection on knowledge sharing occur?
Tijdens welke activiteiten in de werkgeverorganisatie wordt gereflecteerd op hoe het kennis delen ging?	During which activities in the employers' organisation does reflection happen on how knowledge sharing went?
Welke activiteit gericht op kennis delen heeft de meeste indruk gemaakt?	What activities aimed at sharing knowledge made the most impression on you?

Wie organiseren sessies die draaien om kennisdelen in de werkgeverorganisatie?	Who organize sessions aimed at sharing knowledge in the employers' organisation?
Wordt kennisdelen gepromoot in de werkgeverorganisatie?	Is sharing knowledge promoted in the employers' organisation?
Hoe verloopt de werkgeverorganisatie van sessies die draaien om kennisdelen in de werkgeverorganisatie?	How do sessions that revolve around knowledge sharing go in the employers' organisation?
Welke acties onderneem of sessies organiseer jij om kennis te delen in de werkgeverorganisatie?	What actions do you take, or sessions do you organise to share knowledge in your employers' organisation?
Wat is kenmerkend aan momenten waarin kennis wordt gedeeld in de werkgeverorganisatie?	What are characteristics of moments where knowledge is shared in the employers' organisation?
Wat is het niveau van participatie tijdens deze momenten waarin kennis wordt gedeeld in de werkgeverorganisatie?	What is the level of participation during these moments where knowledge is shared in the employers' organisation?
Wat is kenmerkend aan momenten waarin wordt gereflecteerd in de werkgeverorganisatie?	What is characteristic of moments where reflection occurred in the employers' organisation?
Wat is het niveau van participatie tijdens deze momenten waarin er wordt gereflecteerd in de werkgeverorganisatie?	What is the level of participation during these moments where reflection occurs in the employers' organisation?
Wat helpt of hindert jou om kennis te kunnen delen in de werkgeverorganisatie?	What helps or hampers you in sharing knowledge in your employers' organisation?
Wat helpt of hindert jou om te kunnen reflecteren in de werkgeverorganisatie?	What helps or hampers you in sharing knowledge in your employers' organisation?
Ervaar je de vrijheid om zelfreflectie momenten te kunnen organiseren?	Do you experience the freedom to organise moments aimed at reflection yourself?
Ervaar je de vrijheid om zelf kennis deel momenten te kunnen organiseren?	Do you experience the freedom to organise moments aimed at knowledge sharing yourself?
Welke wensen omtrent kennis deling heb je in de werkgeverorganisatie?	What desires do you have in regard to knowledge sharing in the employers' organisation?
Welke wensen omtrent reflectie heb je in de werkgeverorganisatie?	What desires do you have in regard to reflection in the employers' organisation?

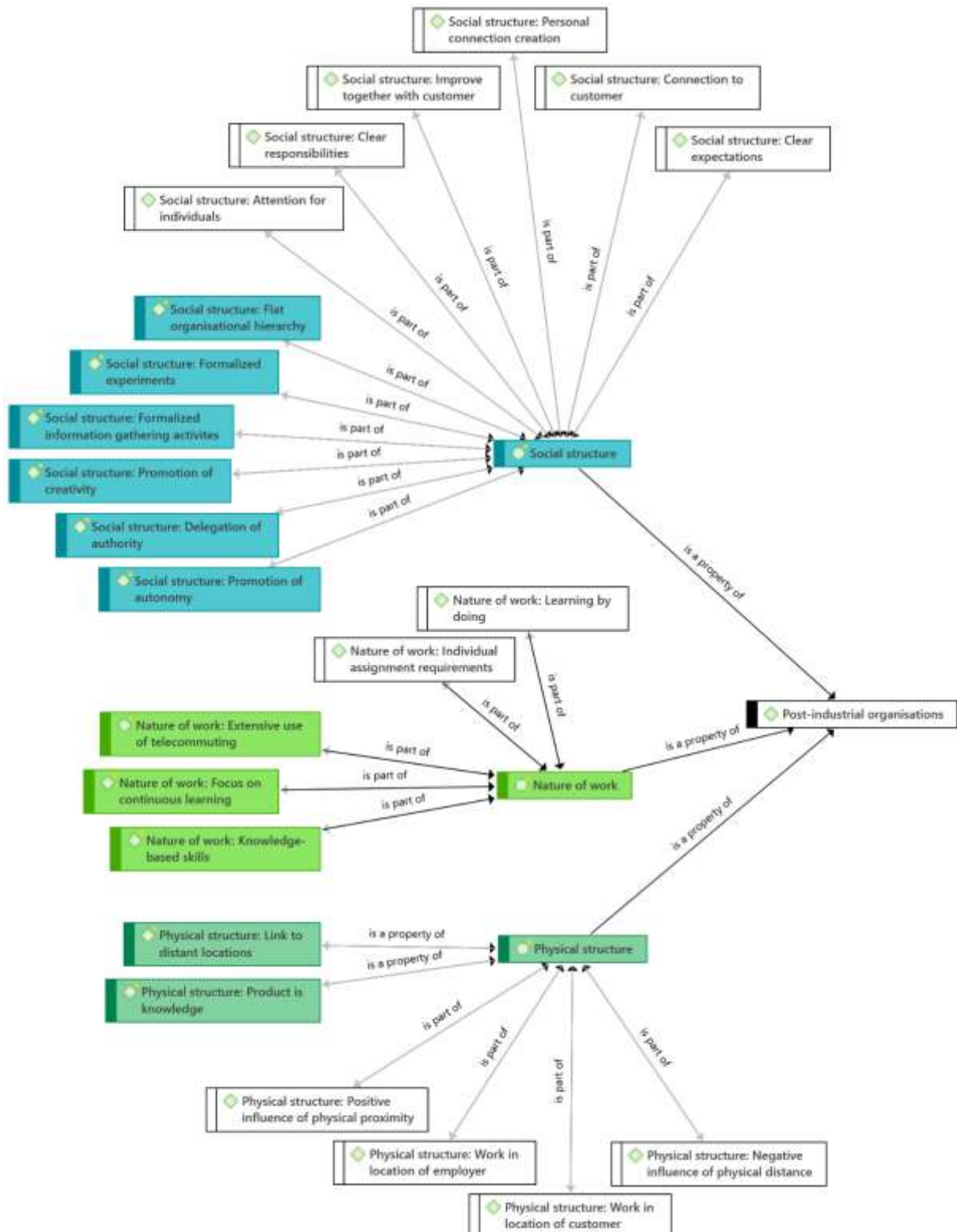
### Concluding the interview

- Ask interviewee if there are any questions or further remarks.
- If not, end the interview recording.
- Thank the interview again for their participation.

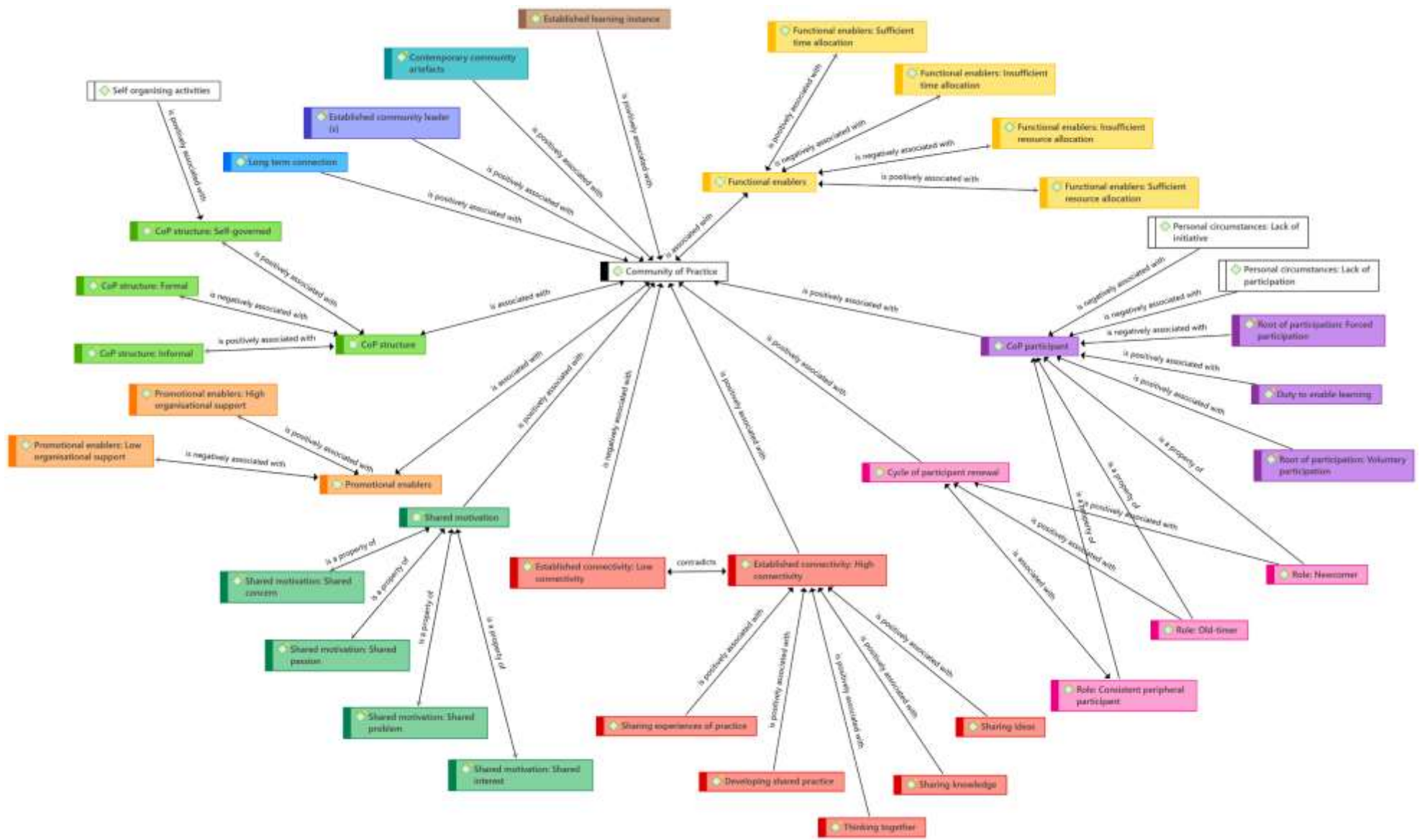
## Appendix B. Code trees

Clarification of colour use in the trees of codes. The black coloured codes depict the concept. Other coloured codes and themes depict those that were developed from literature (deductive codes). Colourless codes depict codes that emerged from the data (inductive codes).

*Code tree: 'Post-industrial organisations' characteristics*



Code tree: 'Community of Practice' characteristics





Code tree: 'Reflective practices'



## Appendix C. Consent forms

### *Consent form interviewees*

#### **Toestemmingsformulier deelnemer afstudeeronderzoek**

Thesis onderzoek door LPA Schaafstra - *Understanding Communities of Practice and Reflective Practices in Dynamic Organizations*

Instemming om deel te nemen aan dit onderzoek

- Ik ..... neem vrijwillig deel aan dit onderzoek.
- Ik begrijp dat, ondanks mijn instemming nu deel te nemen, ik mezelf ten alle tijden kan terugtrekken uit de studie en kan weigeren antwoord te geven op vragen zonder enige vorm van consequenties.
- Ik begrijp dat ik mijn toestemming voor het gebruik van mijn data kan intrekken binnen twee weken na het interview waarna het materiaal verwijderd zal worden.
- Ik ben schriftelijk geïnformeerd over het doel en de opzet van de studie en heb de kans gekregen hierover vragen te stellen.
- Ik begrijp dat participatie betekent dat ik deelneem aan semigestructureerde interviews.
- Ik begrijp dat ik niet direct baat zal hebben bij deelname aan dit onderzoek.
- Ik geef toestemming dat mijn interview wordt opgenomen met audio en video.
- Ik begrijp dat alle informatie die ik aanlever voor dit onderzoek vertrouwelijk wordt behandeld.
- Ik begrijp dat in alle rapportages van de resultaten van dit onderzoek mijn identiteit anoniem zal blijven. Dit zal gebeuren door het veranderen van mijn naam en het anonimiseren van zaken welke mijn identiteit of die van personen of organisaties waarover ik spreek kunnen onthullen.
- Ik begrijp dat geanonimiseerde frases van het interview als quotes kunnen worden opgenomen in het onderzoeksrapport/thesis.
- Ik begrijp dat als ik de onderzoeker informeer dat ikzelf of iemand anders risico loopt op schade of leed, het nodig kan zijn dat de onderzoeker dat aan de relevante autoriteiten doorgeeft na dit eerst met mij besproken te hebben echter zonder dat permissie om dit te rapporteren nodig is.
- Ik begrijp dat de toestemmingsformulieren en interview opnamen worden vastgelegd in een beveiligde map op de computer van de onderzoeker en dat geen persoon anders dan de onderzoeker toegang heeft tot deze informatie, deze informatie wordt bewaard totdat het onderzoek is afgerond en de thesis (succesvol) is verdedigd door de onderzoeker.
- Ik begrijp dat een transcriptie van mijn interview waar alle identificerende informatie is verwijderd voor twee jaar na het afronden van het onderzoek zal worden bewaard door het opleidingsinstituut.
- Ik begrijp dat ik alle informatie die ik heb gegeven op alle momenten mag opvragen uit de hierboven gespecificeerde dataopslag locaties.
- Ik begrijp dat het mij vrij staat contact te zoeken met elk ander persoon die betrokken is bij het onderzoek om verdere verduidelijking en informatie te ontvangen.

**Onderzoeker:** Laura PA Schaafstra | tel:

Personal information redacted

**Thesis onderzoek begeleider:** dr. Ir. Sjors Witjes |

Personal information redacted

Datum:

Datum:

Handtekening participant

Handtekening onderzoeker

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*Consent form participating case study organisations*

**Toestemmingsformulier bedrijf als casus afstudeeronderzoek**

Thesis onderzoek door LPA Schaafstra - *Understanding Communities of Practice and Reflective Practices in Dynamic Organizations*

Instemming om deel te nemen aan dit onderzoek:

- Ik ..... stem namens bedrijf ..... toe dat medewerkers van dit bedrijf vrijwillig deel mogen nemen aan dit onderzoek.
- Ik ben schriftelijk geïnformeerd over het doel en de opzet van de studie en heb kans gekregen hierover vragen te stellen.
- Ik begrijp dat participatie betekent dat medewerkers kunnen deelnemen aan semigestructureerde interviews
- Ik begrijp dat het bedrijf niet direct baat zal hebben bij deelname aan dit onderzoek.
- Ik begrijp dat alle informatie die wordt aangeleverd door het bedrijf voor dit onderzoek vertrouwelijk wordt behandeld, dit is ook van toepassing op alle informatie aangeleverd door medewerkers door middel van interviews en andere aangeleverde gegevens.
- Ik begrijp dat alle rapportages van de resultaten van dit onderzoek de identiteit van de organisatie anoniem zal blijven. Dit zal gebeuren door het veranderen van de naam van het bedrijf en het anonimiseren van zaken die de identiteit van het bedrijf kunnen onthullen.
- Ik begrijp dat in alle rapportages van de resultaten van dit onderzoek de identiteit van de geïnterviewde medewerkers anoniem zullen blijven. Dit zal gebeuren door het veranderen van de naam van de geïnterviewde en het anonimiseren van zaken welke de identiteit van de geïnterviewde of die van personen of organisaties daarover zij spreken kunnen onthullen.
- Ik begrijp dat, ondanks de instemming dat deelnemers mogen deelnemen, zij zich ten alle tijden kunnen terugtrekken uit de studie en kunnen weigeren antwoord te geven op vragen zonder enige vorm van consequenties.
- Ik begrijp dat een interview transcript verstrekt wordt aan de geïnterviewde en dat zij in de gelegenheid zijn hierop te reageren.
- Ik begrijp dat, tenzij de geïnterviewde expliciet toestemming geeft, het interview transcript niet verstrekt wordt aan het bedrijf.
- Ik begrijp dat het interview consent form, tenzij de geïnterviewde hier expliciet toestemming voor geeft, niet wordt verstrekt aan het bedrijf.
- Ik begrijp dat geanonimiseerde frases van de interviews als quotes kunnen worden opgenomen in het onderzoeksrapport/thesis.
- Ik begrijp dat als de geïnterviewde de onderzoeker informeert dat zijzelf of iemand anders risico lopen op schade of leed, het nodig kan zijn dat de onderzoeker dat aan de relevante autoriteiten doorgeeft na dit eerst met de geïnterviewde besproken te hebben echter zonder dat permissie nodig is om dit te rapporteren.

- Ik begrijp dat de toestemmingsformulieren en interview opnamen worden vastgelegd in een beveiligde map op de computer van de onderzoeker en dat geen persoon anders dan de onderzoeker toegang heeft tot deze informatie, deze informatie wordt bewaard totdat het onderzoek is afgerond en de thesis (succesvol) is verdedigd door de onderzoeker.
- Ik begrijp dat een transcriptie van de interviews waar alle identificerende informatie is verwijderd voor twee jaar na het afronden van het onderzoek zal worden bewaard door het opleidingsinstituut.
- Ik begrijp dat het de geïnterviewde vrijstaat contact te zoeken met elk ander persoon die betrokken is bij het onderzoek om verdere verduidelijking en informatie te ontvangen.

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