BUILDING NEW SOCIAL CAPITAL WITH SCENARIO PLANNING[1]

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[1] This paper is derived from the first author's unpublished doctoral dissertation: Lang, T. (2012). Essays on How Scenario Planning and the Building of New Social Capital are Related. *DPhil: University of Oxford*.

Abstract

Practitioners have observed that scenario planning contributes to building new social capital. In scenario planning terms, new social capital can provide access to new information, novel strategic options and unprecedented collaborative opportunities. However, there is no description or explanation in the literature as to how scenario planning can build new social capital. Reporting on research into the scenario planning process of two organizations, we find that scenario planning generates new social capital through learning with the conceptual future, which is a direct investment in building new shared systems of meaning – the cognitive dimension of social capital. This then enables the structural and relational dimensions of new social capital to emerge as by-products. The building of new social capital provides another purpose for scenario investments and another quality criterion by which to assess the value of these interventions. The insights of the research will be of interest to: scenario planning scholars; leaders interested in how to purposefully design and conduct scenario planning if a core intent is to build new social capital; and scholars interested in the cognitive dimension of social capital and its creation.

Keywords

Scenario planning, cognitive social capital, building social capital, turbulence

Highlights

- Scenario planning can be a direct investment in the cognitive dimension of new social capital
- Learning with the conceptual future is how scenario planning builds the cognitive dimension of new social capital
- Developing new social capital is another purpose for scenario planning investments
- Scenario planning can help build new social capital to address turbulence more quickly than previously suggested

1. INTRODUCTION

Scenario planning has been observed in practice to contribute to the building of new social capital. Galer (2004a, 2004b), reflecting on scenario planning interventions concerning the transition from apartheid in South Africa, wondered whether a major outcome of this work was the novel networks and the new myths supplied by the scenarios that supported change over the long term. Adam Kahane, the Mont Fleur Scenarios facilitator also working on that transition, observed that the scenario planning process seemed to build a "cross-sectoral network of trusting relationships – what Robert Putnam calls social capital" (Kahane 2004:35). He felt these relationships had contributed significantly to the peaceful political transition in South Africa.

The premise of social capital is that investing in social relations produces beneficial returns, "enabling individuals and social groupings to achieve outcomes they could not otherwise achieve, or could only do so at extra cost," (Burt, Coleman, and Putnam as cited in Nahapiet, 2008:582). The research we report on here suggests that when derived from scenario planning, the social capital which is generated can: facilitate access to, and the flow of, new information; create a shared appreciation of a strategic situation (Adler & Kwon, 2002; Lin 2001: Sandefur & Laumann, 1998); increase solidarity or common interests (Sandefur & Laumann 1998); generate novel strategic opportunities or options (Nahapiet, 2009); and present new opportunities for collective action (Adler & Kwon, 2002).

An organization's ability to create new social capital over time has been found to be positively correlated with its success (Maurer & Ebers, 2006). The building of social capital is particularly important in turbulent (Emery & Trist, 1965) or hyper-velocity (Bourgeois & Eisenhardt, 1988) environments within which scenario planning is used (Ramirez et al., 2008). The process of creating new social capital enables actors to reach out to others to create common ground on which to address turbulence together (Emery & Trist, 1965). Collaboration, or "working together" (Heckscher, 2007:2), was proposed by Emery and Trist and their students (e.g. Ramirez & Selsky, 2016) as a good approach to turbulence, particularly as further independent action (such as through competition) might well exacerbate it. With turbulent or hyper-

velocity environments becoming more salient (Rigby & Bilodeau, 2007), finding direct and quick ways to produce new social capital is strategically of great importance.

In this paper, we report on research into the building of new social capital in three scenario planning case studies – that of the European Patent Office (EPO) and two rounds of scenario planning carried out in The Open University (OU) in the UK. The first OU scenario planning round (OU1) was carried out in 2002-2003, followed by a second round (OU2) conducted two years later as part of the university's ongoing strategic planning. The facilitators and the process for the two OU rounds were different, so the cases provide a useful comparison within the same organization.

Our intention in reporting on this research is twofold. First, we seek to provide an explanation about how leaders and scenario planning facilitators can purposefully design and conduct scenario planning processes when a core interest is in forming new social capital. In doing so, we propose that building new social capital is an additional quality criterion with which to assess the value of scenario planning investments.[2] Existing quality criteria are centred on fostering strategic insights. In contrast, we draw attention to how scenario planning can impact the building of relationships – both intentionally and as an unintended by-product. This is important for two reasons. One, in turbulent environments, it is important to reach out to others to better understand what is causing the turbulence, and find ways together to calm it. This places an emphasis on creating new social capital, representing a quality criterion that has not been explicitly discussed in the scenario planning literature. Second, scenario planning often represents a significant investment of resources and having new social capital as another outcome of the work increases the return on that investment.

Second, few studies have explored the cognitive dimension of social capital, particularly its role in forming new social capital (as noted by Bartsch et al., 2013; Maurer & Ebers, 2006; and Nahapiet, 2008). Cognitive social capital refers to the resources that create shared systems of meaning among a group. These include language and frames of reference that enable groups with new members to communicate

[2] We thank Kees van der Heijden for suggesting to us that the building of new social capital in effect provides a new quality standard for evaluating scenario planning investments.

and work together. Our research finds that scenario planning is a direct investment in bringing about these cognitive resources, enabling the structural (networks) and relational (quality of relationships) dimensions to emerge as by-products, which the literature suggests is how social capital is created (Ostrom & Ahn, 2003). We thus seek to contribute to further understanding the cognitive dimension of social capital and its formation.

This paper is organized as follows. We first review the scenario planning literature in the light of addressing turbulence to show the importance of proactively building new social capital in this context. We also explore the social capital literature to conceptualize how scenario planning may build new social capital. We move on to operationalize scenario planning and social capital for our research and outline the three cases and the research methods we employed, before presenting the findings. Finally, we discuss our findings in light of the relevant literatures on both scenario planning and social capital, and conclude with considerations for designing scenario planning interventions when the purpose is to build new social capital.

2. LITERATURE REVIEW[3]

2.1. Scenario planning and turbulence

Scenario planning, like social capital, has a rich practical and conceptual history. With increasing turbulence in the environment in the late 1960s, private firms started to look for alternatives to single-point forecasts. Scenario planning was adapted for business-planning purposes from its earlier military and public policy applications.

In addressing turbulence, scenario planning made learning about uncertainty and its link to leaders' mental models explicit. Faced with not being able to rely on forecasts, leaders looked to scenario planning to help them engage with uncertainty and question their assumptions about how the dynamics of their industry could shape the future. The expected outcome was the generation of new strategic insights and

[3] A full literature review of the relationship between social capital building and scenario planning is beyond the scope of this paper but is available in the first author's unpublished doctoral dissertation: Lang, T. (2012). Essays on How Scenario Planning and the Building of New Social Capital are Related. *DPhil: University of Oxford*.

options, and for leaders to be better prepared for uncertainty (Chermack & Coons, 2015; Wack, 1985a, 1985b). Scenario planning has since been claimed to be of help in: framing and transforming the framing and the perception of an issue or problem (Ramirez & Wilkinson, 2016); gathering insights on a strategy and the assumptions behind it (Schwartz 1996; Wack ,1985a); glimpsing what possible futures might look like (Bunn & Salo, 1993); improving the quality of strategic conversations (Bradfield et al., 2015; Van der Heijden 2005); better appreciating ambiguity (Sutcliffe & Weber, 2003); influencing decsions (Phadnis et al. 2016); helping to make research 'interesting' (Ramirez et al., 2015); and improving organizational learning (Burt & Chermack 2008; de Geus, 1998).

To make sense of a situation characterized by uncertainty, people using scenario planning reach out to others – particularly in the intuitive logics tradition (Bradfield et al., 2005), which is the scenario planning tradition used by the organizations we researched, the EPO and OU. The intent in those cases was to see things from different perspectives (Wright & Cairns, 2011), to identify weak signals (Schoemaker et al., 2013), and to engage people in an improved strategic conversation (Van der Heijden, 2005). To do so, experts, stakeholders and 'remarkable people' – those with a unique perspective across a range of fields (Van der Heijden, 2005) – were involved, along with leaders of these organizations. This was done through conversations, interviews and workshops, although online platforms now present ways of reaching out to an even greater number of people (Raford, 2015). As a result of this reaching out process, social capital has been observed in practice to form as a by-product (Galer, 2004a, 2004b; Kahane, 2004).

The foregrounding of accessing new information and making sense of it in scenario planning may be because the traditional focus of strategy has been neo-classical, where the way to deal with turbulence is to compete more quickly (Selsky et al., 2007). Well known scenario planner de Geus (1988:71), for example, said that "[t]he ability to learn faster than your competitors may be the only sustainable competitive advantage". Thus, the focus of scenario planning has been less on how to build relationships that can deliver a range of benefits – social capital – and more on the information that can be accessed and made sense of to help organizations compete better and more quickly.

However, in a networked world with increasing volatility, a systems-based view of strategy – the

socio-ecological perspective – draws attention to collaboration being as important as competition (Ramirez & Mannervik, 2016; Ramirez & Selsky, 2016). Collaboration with dissimilar others can create common ground so as to collectively shut out and/or move on from the turbulence (Ramirez et al., 2008). The formation of new social capital contributes to the creation of this common ground. This moves social capital building from being a by-product of scenario planning, that some practitioners were aware of, to possibly being a central, clear and rigorous reason for undertaking the work. Despite this, there is no detailed description or explanation in the literature about how to build new social capital with scenario planning. We seek to address this gap, to assist scholars and practitioners who are interested in addressing turbulence in this way.

2.2. Cognitive social capital

The term social capital can be traced back to an article by Hanifan in 1916, where he discussed its value in the context of encouraging community participation in rural schools in the United States. According to Woolcock and Narayan (2000), the concept was then picked up by urban sociologists in the 1950s (Seely et al., 1956), an exchange theorist (Homans, 1961) and an urban development scholar (Jacobs, 1961) in the 1960s, and an economist (Loury, 1977) in the 1970s. However, the concept really got traction in the 1980s and 1990s with the influential writings of Bourdieu (1986), Burt (1992), Coleman (1988), Fukuyama (1995), Nahapiet and Ghoshal (1998), Ostrom (1992), and Putnam (1993). Each of these scholars described the value of social capital in different contexts, as we will see below.

Three dimensions of social capital are evident in the literature (Nahapiet & Ghoshal, 1998). The first is structural: the social capital that can be obtained in any situation depends on the networks of relationships that actors have access to. Bourdieu (1986) referred to the superior resources that could be gained by the elite classes because of the structure of the networks they had access to; Burt (1992) found that those actors able to broker across structural holes in networks achieved greater success; Coleman (1988) argued that the structure of networks shaped an actor's options, modifying the rational action paradigm; Putnam (1993) saw membership in cross-cutting associations facilitating action for the benefit of

society; while Nahapiet and Ghoshal (1998) suggested that the networks formed in organizations provided them with an advantage in producing intellectual capital.

The second dimension of social capital is relational: the quality of relationships within a network affects social capital outcomes. Fukuyama (1995) argued that societies characterized by high levels of trust fared better economically than those where trust had been eroded because of strong family connections or dominant and centralizing governments. Putnam (1993) saw high levels of trust – as well as norms – created through the existence of membership in cross-cutting associations as the reason for economic and political success in societies such as Italy and the US. Bourdieu (1986) described how norms become socialized in elite classes, leading to cultural reproduction. Ostrom (1992) showed how an agreed set of rules or norms can facilitate co-operation among actors, ensuring the successful introduction of new technologies. And Nahapiet and Ghoshal (1998) demonstrated the importance of relational factors such as trust, norms, obligations, expectations, and identification for building intellectual capital in organizations.

The third dimension of social capital is cognitive, consisting of shared systems of meaning which make communication and interpretation possible among a group of actors. Nahapiet and Ghoshal (1998) identified this dimension as being essential for facilitating communication in organizations, enabling them to successfully create intellectual capital. The cognitive dimension is not explicitly mentioned in many definitions of social capital but is nonetheless alluded to, suggesting it has not yet been fully explored in the literature. For example, Putnam (1993) assessed the possible benefit of multiple cross-cutting associations not only as concerning the creation of trust but also for shared systems of meaning, thereby making communication and interpretation among them easier. Bourdieu's (1986) work indicates that shared systems of meaning are likely to be an important component of membership of the elite group and the way in which the culture of the group is reproduced. And Burt (2010) rethought the benefit of brokerage across structural holes to be not so much the information gained but the cognitive and emotional skills produced in the process.

The cognitive dimension is particularly relevant to scenario planning because of scenario planning's strong focus on cognition. This has been the case since the 1980s, when Wack (1985a, 1985b), explaining

his experience at Shell, described how scenarios were able to overcome individual leaders' existing mental models by challenging the likelihood that the future would unfold as they imagined and proposing other, equally plausible routes. In the same vein, Schoemaker (1993) showed how scenarios could address probability heuristics (Tversky & Kahneman 1974) in decision making by having one set of biases (overconfidence, anchoring and availability) be offset by another (the conjunction fallacy). Wright and Goodwin (1999:311) recommended that scenario planning be 'standard' procedure prior to conventional decision analysis because of the capacity of the methods to "challenge individual and organizational worldviews". Wright (2005:86) referred to scenarios as "prospective sensemaking devices" and Van der Heijden (2008:89) described how scenario planning provides "decision-makers with a sensemaking tool in order to gain understanding of what seems chaotic at first sight".

This focus on cognition led Grinyer (2000:21) to describe scenario planning as a "cognitive approach to group strategic decision taking", arguing that this 'softer' perspective complements more analytic strategic planning by encouraging learning about the situation. As we will see in the next section, this emphasis on the cognitive dimension suggests how scenario planning can directly build new social capital.

2.3. Building new social capital

Scholars have regarded creating new social capital as difficult because organizations tend towards dynamic conservatism (Schon, 1971), where relationships become 'locked-in' over time. Structural lock-in is caused by many factors, including relying on existing connections when reaching out to generate new ones (Gulati & Gargiulo, 1999) in order to reduce search time and minimize the risk of opportunistic behaviour. This can result in over-embeddedness (Granovetter, 1985; Polanyi, 1957) and increasingly closed systems where everyone knows everyone else (Duysters & Lemmens, 2003). Relational lock-in relates to familiarity with existing partners that has built trust and expectations about reciprocity. In addition, there are concerns about a loss of reputation for cutting ties that could result in third party defections (Gargiulo & Benassi, 2000). Combined with uncertainty about how new relationships might work out, the reduced costs, time and emotional energy in staying with existing relationships are significant. Cognitive lock-in (Maurer & Ebers, 2006; Uzzi, 1997) refers to the shared meanings and language developed over time,

which facilitates communication but can also lead to groupthink and redundancy (Smith-Doerr & Powell, 2005). The emphasis in scenario planning on reaching out to others for new perspectives and information can be understood as an acknowledgement of the risks of groupthink (Wright et al., 2004).

Researchers have also drawn attention to the time often required to build social capital. Putnam (1993) suggested that social capital is a historic endowment accumulated over decades – or even centuries – rather than something that can be quickly created. Emery and Trist (1965) suggested it can take generations for values (the relational dimension of social capital) to change.

One of the contested points in the literature is whether social capital is built through direct and deliberate investments or if it emerges as a by-product of investments in other activities. Bourdieu (1986:249) believed that social capital can be deliberately designed because it is not a natural or social given and must be achieved through "endless effort at institution". As he wrote: "the network of relationships is the product of investment strategies, individual or collective, consciously or unconsciously aimed at establishing or reproducing social relationships that are directly usable in the short or long term". The alternate view is that social capital emerges as a by-product of investments made in other activities. Coleman (1988) took this view, arguing that social capital becomes available to members in an organization once it is established for a particular purpose.

Other social capital scholars have argued a more nuanced position between these two. Nahapiet (2008, 2009) suggested there is evidence in the strategic management literature to support both positions. She cited Lovas and Ghoshal (2000) as an example of the by-product view – that top management provides the conditions that influence how people spend their time, which in turn shapes the social capital that is built. On the other hand, she said the work of Maurer and Ebers (2006) – showing how biotechnology start-ups were able to reconfigure their social capital as they became established – is indicative of the very deliberate investments organizations can make to form social capital (Nahapiet, 2009).

Ostrom and Ahn (2003) suggested that some dimensions of social capital may be built more directly and deliberately than others. They argued that reciprocity, trust and networks are more likely to be created

as a by-product of activities, while institutions – with their focus on "crafting rules" – can be more directly created. As they (2003:xxxi) wrote: "Investing in the process of examining current conditions and likely future problems and coming to a decision about the most appropriate set of rules to be used to govern future interrelationships is obviously as much an investment decision as any investment in physical infrastructure". Their work suggests that the cognitive dimension of social capital – shared systems of meaning – can be directly and purposefully built, enabling the structural and relational dimensions to be built as by-products.

The social capital literature highlights the cognitive dimension of social capital in knowledge-intensive situations (Nahapiet & Ghoshal, 1998), and suggests that it leads to the formation of new social capital through processes aimed at problem solving and learning. For example, Cohen and Fields (1999:120) found that joint problem solving created the social capital that explains the existence and success of Silicon Valley. Maurer and Ebers (2006) described the usefulness of learning processes to enlarge leaders' cognitive schemas to build new social capital. Pedler and Attwood (2011) described how action learning projects can create social capital by having structural holes bridged by people from different functional areas working together. While Melander and Nordqvist (2002) found that targeted learning activities aimed at changing core beliefs among participants in networks in the Swedish furniture industry can build social capital over the short term, in contrast to the longer timeframes Putnam (1993) suggested were needed.

The social capital literature also suggests that learning processes must be meaningful (Baker, 2000) to form new social capital. That is, these processes have to be regarded as important and sufficiently useful to engage people. Scenario planning often involves the most senior leaders of an organization and is a strategic conversation (Van der Heijden, 2005) often about a significant aspect of the future. This suggests that scenario planning provides a meaningful learning process, even accelerating learning (de Gues 1988, 1997).

Finally, Sabel (1993) points to the value of temporality in building social capital. He explored the connection between the conceptual past and building the relational dimension of social capital. He found

that as people researched and learnt about the history of their industry together, they had the chance to re-interpret "their collective past, and especially their conflicts in such a way that trusting co-operation comes to be seen as a natural feature... of their common heritage" (Sabel, 1993:1136). Scenario planning also involves temporality, focusing on the conceptual future to re-frame the present (Normann, 2001). Sabel and Normann's observations suggest that learning from the perspective of the conceptual future with scenario planning may be helpful in building new social capital.

2.4. Summary

In a networked world with increasing volatility, collaboration is as important as competition to address turbulence. Social capital is an important element of creating common ground and enabling this collaboration. This moves the building of new social capital from being a by-product of scenario planning observed in practice, to being possibly a central reason for undertaking the work.

To create new social capital in knowledge-intensive situations, such as those involving scenario planning, the cognitive dimension is highlighted (Nahapiet & Ghoshal, 1998). Ostrom and Ahn (2003) suggest this dimension can be directly built while the structural and relational dimensions are more likely to emerge as by-products. The literature also suggests that learning processes in knowledge-intensive situations are an effective way of building social capital. Scenario planning is regarded as a mechanism for speeding up organizational learning, suggesting that this is also how scenario planning leads to new cognitive social capital. Finally, Sabel (1993) draws attention to how the past can help in generating social capital in the present, suggesting that the future that scenario planning invokes is another conceptual space that can help build new social capital.

3. RESEARCH DESIGN

The question guiding our research was: "How does scenario planning contribute to building new social capital?". In this section we define scenario planning and social capital to operationalize them for our research, and we discuss the three cases and the research methods that were deployed.

3.1. Defining scenario planning and social capital for the research

There is no readily agreed definition of either scenario planning or social capital in the literature. The discussion below provides an overview of how the terms were operationalized for this research.

3.1.1 Scenario planning: Three discrete scenario planning traditions are discussed in the literature (Bradfield et al. 2005): probabilistic modified trends; la prospective; and intuitive logics. The intuitive logics tradition has come to dominate scenario practice (MacKay & McKiernan, 2006). This tradition is often referred to as the 'Shell approach', indicating the significant impact Shell practitioners and alumni have had on the development of the field (Wilkinson & Kupers, 2014). It foregrounds the participants as the ones to develop the scenarios (although they draw on expert knowledge), does not use detailed computer modelling (although key variables can be quantified), and regards all scenarios as equally probable (Bradfield et al., 2005).

The intuitive logics tradition was used by Galer and Kahane, the practitioners who observed the connection between scenario planning and building social capital. It is also the approach used by the organizations in the three case studies we analyzed in this research – the EPO and OU. A key aim of the intuitive logics approach is to tap the intuition and expertise of participants to help them to better appreciate the reasons for, and potential consequences of, turbulence. Philosophically, this approach emphasizes the social process of actors in the situation constructing and testing explanations and models (Hatch & Cuncliffe, 2006) as compared to approaches which regard 'answers' as being better gained through more traditional, scientific research methods such as modelling and reliance on experts who seek 'objective' views of a system. As we discuss below, our research suggests that it is this social process in the intuitive approach which contributes to building new social capital.

For this research, we use the definition of Van der Heijden (2005), whose book *Scenarios: The art of strategic conversation* has for many years been regarded as a definitive work in the intuitive logics tradition. In a passage centred on competitive strategy, Van der Heijden (2005:49) summed up this conceptualization of scenario planning as follows:

> Scenario-based planning makes sense of the situation by looking at multiple futures, which are treated as equally plausible, reflecting the inherent uncertainty in the situation, but also what is considered predictable. It is non-prescriptive. It recognizes that successful competitive strategies must be original inventions made by organisations. It therefore employs processes that enhance the capability of the organisation to mobilise resources towards greater inventiveness and innovation.

3.1.2 Social capital: While the existence of multiple definitions has led some scholars to condemn social capital as "definitionally chaotic" and conceptually incoherent (Fine, 2010:5), others have argued that this diversity is a strength. For example, Mearman (2006:48) believed that uniformity of meanings is not always positive, as it can reduce "flexibility and prevent change and therefore make an approach analytically poorer". While a key strength of social capital may be its timelessness and ubiquitousness, to be operationalized for a specific research project, the concept needs to be defined in relation to the context in which it is being explored (Bourdieu, 1986; Bowey & Easton, 2007; Fine, 2001; Foley & Edwards, 1999; Ostrom & Ahn, 2003).

We find Nahapiet and Ghoshal's emphasis on social capital and its role in the creation of intellectual capital – defined as "the knowledge and knowing capability of a social collectivity" – most relevant, as their definition fits a well-accepted view in the scenario planning literature that scenario planning provides a valuable form of intellectual capital for addressing the inherent uncertainty of the future (e.g. de Geus, 1988, 1997; Van der Heijden, 2005; Wack, 1985a, 1985b). In addition, their article has been cited 4,287 times according to the Web of Science Index as of 1 June 2017, the largest number for any article with social capital in the title. Nahapiet and Ghoshal (1998:243) defined social capital as:

> …the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilized through that network (Bourdieu, 1986; Burt, 1992).

They defined the three dimensions of social capital in the following way. First, *structural* – "the overall pattern of connections between actors – that is, who you reach and how you reach them" (Nahapiet & Ghoshal, 1998:244). Here they included concepts such as network ties (their existence or absence), network configuration (such as density, connectivity and hierarchy), and appropriability – the idea that existing connections can be used for purposes other than those for which they were created (Coleman 1988). Second, *relational* – "describes the kind of personal relationships people have developed with each other through a history of interactions" (Nahapiet & Ghoshal, 1998:244). Here they included trust and trustworthiness, norms and sanctions, obligations and expectations, and identity and identification. Third, *cognitive* – "refers to those resources providing shared representations, interpretations, and systems of meaning among parties" (Nahapiet & Ghoshal, 1998:244). These resources include shared language, codes and narratives. This dimension of social capital captures the importance of inter-subjectivity – that is, the "variety of relations among [actor's] perspectives" (Gillespie & Cornish, 2009:19). As circumstances change, new perspectives among a new set of actors have to be created.

3.2. Cases

To research how scenario planning can build new social capital, three in-depth cases (Flyvbjerg, 2011; Yin, 2003) were studied. Case studies have previously been used to research social capital building (e.g., Melander & Nordqvist, 2002; Maurer & Ebers, 2006; Pedler & Attwood, 2011). Our intent in using cases was to facilitate a deep understanding of the scenario planning process in each organization; to be able to observe the formation of new social capital; and to obtain a comparison across sites.

The three cases were the scenario planning work of the European Patent Office (EPO), conducted between 2004 and 2007, and those of The Open University (OU) in the UK undertaken first in 2002 (OU1) and again in 2005 (OU2). At the time of these interventions, the leadership of both organizations concluded they were experiencing turbulence. In the EPO, the challenges of a changing Europe, the rise of a knowledge economy, and international trade were leading to huge growth in patent applications (McGinley, 2008). For the OU, there were changes in government policies such as the introduction of top-

up fees in higher education, and an increase in e-learning, part-time learning and distance learning being taken up by other universities and the private sector.

The unit of analysis of the research was the social capital links within each case. The choice of links to be studied was based on our research question and facilitated by the accessibility, usability, variance and comparability of the data. In the EPO case, the focus was on the new social capital built between the office and the patenting and intellectual property academic community. The scenario planning process was a deliberate effort to reach out to and engage academics; provide thought leadership in the global patenting and intellectual property area; bring in voices that had for a long time been considered external to the EPO; and develop with them and across the office a shared understanding of a small set of alternatives that the future might hold.

In the OU1 and OU2 cases, the focus was on the new social capital which was sought to be built between the Vice-Chancellor's Executive (VCE) – those responsible for the scenario planning process and the university's strategic direction – and the university's own academic communities. Academics had been more removed from institutional strategy than administrative staff and an aim of the scenario planning was to engage them in the strategic planning of the organization to ensure its continued success. An overview of the OU1 and OU2 and EPO cases is provided in Appendix A.

3.3. Research methods

Mixed methods (Creswell, 2003), as outlined in Figure 1, were used to explore the three dimensions of social capital and ensure the consistency of the data which was accessed and reported within and across the cases.

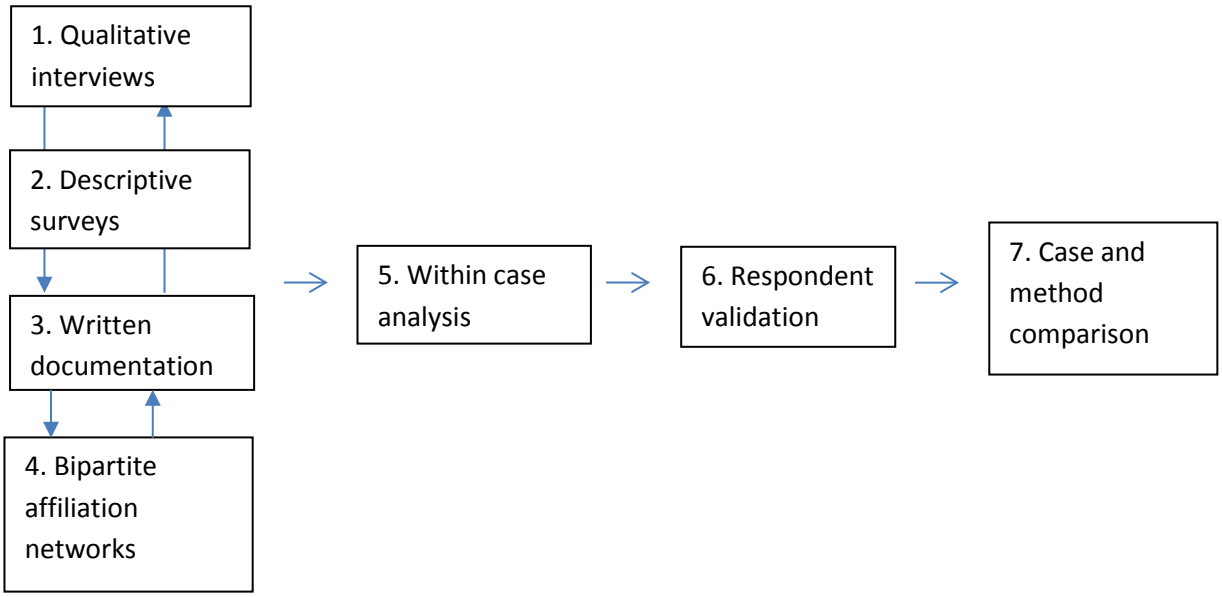


Figure 1. Overview of the research methods

3.3.1 Interviews: 70 semi-structured in-person and phone interviews were undertaken with those involved in the scenario planning processes (35 from the EPO case and 35 from the OU1 and OU2 cases), based on sensitizing concepts (Denzin as cited in Patton, 1990). These sensitizing concepts served as guides for what data to look for in the field and were drawn from Nahapiet and Ghoshal's description of the three dimensions of social capital – cognitive, structural and relational. The aim was to provide an initial starting point for exploration. However, once in the field, attention was also given to understanding other emergent factors.

Interviewees included sponsors of the scenario planning process and those working in the core scenario project teams and academics in each of the cases. Using a stratified purposeful sampling technique (Miles & Huberman, 1994), the focus was on gaining a diversity of perspectives from people sufficiently familiar with the work and who represented different organizational positions, geographical areas and academic disciplines, and who participated in different aspects of the scenario planning process.

The interviews were transcribed, coded and analyzed using NVIVO software. This analysis was guided by the sensitizing concepts and pattern matching (Yin, 2003) – that is, comparing patterns in the data from the field with what was suggested by the literature. The intention was to enable rival explanations among the independent variables (aspects of the scenario planning process) that were

particularly important in understanding how the deployment of the work impacted the building of social capital in each case. A categorical analysis of the data was then compiled, building up from preliminary concepts in each of the cases to aggregate themes across the cases for each of the three dimensions of social capital.

3.3.2. Descriptive surveys: To understand the impact of the scenario planning process beyond those directly involved, two electronic surveys were undertaken of the wider communities (the academics). In the case of the intellectual property and patenting academic community (for the EPO case), 290 invitations to complete the survey were sent. As there is no single global body representing academics working in the area of patenting and intellectual property, a number of techniques were used to generate a list of names (e.g. authors of journal publications, speakers and attendees at key conferences, names from the survey itself generated through a snowballing technique). In response, 117 replies were received. In the OU1 and OU2 cases, the invitation to complete the survey was sent by the OU to all (1068) academic staff and resulted in 209 responses. The results of the survey were then compiled and compared across the cases.

3.3.3. Written documentation: File notes, journal articles, internal communication documents, project reviews and invitation lists were reviewed. One outcome of this review was to assemble a complete list of the 659 attendees for the 264 events related to the scenario planning process in each of the cases so that a bi-partite affiliation network analysis (Wasserman & Faust, 1994) could be undertaken to understand the structural dimension built.

3.3.4. Bipartite affiliation networks: This analysis was undertaken by first creating a bipartite graph, with events listed on one axis and individuals on the other. The number 1 was noted in the cell where that person attended the event and a 0 if they did not (Wasserman & Faust, 1994). This graph was then used to create a bipartite or uni-modal network, which was converted into a network visualization using a forced algorithm.

3.3.5. Within-case analysis: The data derived from each of the methods was analyzed within the cases. This analysis was done using the sensitizing and emergent concepts from the field in each of the three dimensions of social capital and comparing the data from each of the methods in relation to them. The

intent here was to triangulate the data within each case and to gain a good understanding of the case's unique properties (Eisenhardt, 1989).

3.3.6. Respondent validation: To seek accuracy and further understanding of the data analysis, informant feedback sessions (Bryant, 2008) were held in each case. In the EPO case this was with the senior manager responsible for scenario planning at the organization at the time (the Chief Economist) and the convenor (the specialist scenario planner bought in to lead the work). For the OU1 and OU2 cases, sessions were held with the senior manager responsible for the work at the time (the head of the Futures Office) as well as five members of staff who had been involved in the core project teams. The outcome from these discussions was a more nuanced understanding of the research findings and their context.

3.3.7. Case and method comparisons: Finally, the data were analyzed across the cases to determine similarities and differences (Eisenhardt, 1989). This was done by comparing the data for each sensitizing and emergent concept across the cases. In addition, similarities and differences were sought across the data sources (interviews, surveys and written documentation) to maximize triangulation so that the data could be investigated from different perspectives – regarded as a useful technique in exploratory research (Glaser et al. as cited in Swan et al., 2010).

4. FINDINGS

In this section we discuss the findings of the research, organized within the social capital dimensions – cognitive, structural and relational. We conclude this section by summarizing the findings, and relating the building of the three dimensions of social capital to each other.

4.1. The cognitive dimension (shared systems of meaning)

The cognitive dimension of social capital refers to "those resources providing shared representations, interpretations, and systems of meaning about parties" (Nahapiet & Ghoshal, 1998:244). Our research findings indicate that scenario planning can contribute to building the cognitive dimension of social capital in five distinct but sometimes overlapping ways.

First, scenario planning accepts the inherent uncertainty of the future and reflects this through different frames conceived as scenarios (Van der Heijden, 2005). Multiple scenario frames (usually two to

four) allow a range of perspectives to be accommodated and validated. In the EPO case, the nature of the debate in patenting and intellectual property had become bipolar, with actors divided broadly between those for and against a formal patent system. The scenario planning enabled an alternative, deeper and more nuanced discussion, with the scenarios enabling different viewpoints to be considered in depth and held side by side. In the OU2 case, the scenarios enabled alternative futures to be rendered to help the leadership team navigate different perspectives and strengthen strategic options. In the OU1 case, the idea of scenarios as alternative futures was introduced to the participants, and they found it valuable for working through the uncertainties of the future. As an interviewee in the OU1 case noted:

> *"...scenarios create a space where you just dispense with this idea that there's one future. There are a number of futures in the environment and that in turn creates a neutral space where people can enter into a conversation about how quick things happen and what might we do with that. You see? So inherently you must come up with a positive measure on social capital because once people start doing that, social capital goes up... that's just what follows scenarios is that space."*

The explicit consideration of multiple frames contributed to building new social capital through enabling partial representations (Anand & Croidieu, 2015) to be compiled alongside each other (Nahapiet & Ghoshal, 1998) and discussed. Representations are structures people use to make sense of the world (Thompson & Fine, 1999). Participants in the EPO and OU scenario planning projects came from different parts of the system, each with their own perspectives about the future. The scenarios rendered their different perspectives into a set, enabling them to learn about, accept, and even internalize the perspectives of others (Decety & Sommerville, 2003; Roubelat, 2000) about the system as a whole. This contributed to increasing shared understanding among the participants.

Second, scenario planning's focus on the conceptual future can also assist people to build the cognitive dimension of new social capital. The future provides a 'safe' space from which actors can consider their and others' views about what changes the turbulence may imply. As discussed above, in the EPO case, academics and other stakeholders had different and often conflicting views about the patent system. Discussing the future of patenting, as compared to the present, provided them with the

opportunity to have more nuanced conversations than they might otherwise have had. As an interviewee in the EPO case described:

> *"Scenarios I think are a way of talking about the future and thus enabling* [people] *to talk about the present in a different way – and about self-perceptions in a different way. And talking about problems in terms of challenges or in terms of future projections takes away a little bit of the, how do you say, acid? It's a way of talking in a more civilized way, maybe a more distant way about problems".*

In the OU1 case, the 23 scenario builders from across the university worked intensely with the VCE for four months to develop the scenarios. They found that focusing on the future and considering how things might be done differently was *"optimistic*" and "*energizing*". In the OU2 case, focusing on the future with the scenarios created the space for the governance group to consider and test strategic options ahead of any commitment.

Scenario planning can help to build new social capital in this regard because it acts as a shared transitional object or space (Amado & Vansina, 2005) to explore possible changes ahead of a commitment to action. This was expressed well by an interviewee in the EPO case:

> *"There were some* [people] *that were just so against patents that they didn't think about what would happen further. Then you put yourself in the future saying what would have happened. And then you come back and acknowledge it would actually mean another form of protection which would very probably resemble the patent system, that is, it would have some kind of exclusivity. So thinking it through to the end can make you think, well actually we could live with the system if you could change it in different ways".*

Scenario planning provides a safe space to play out the consequences of different perceptions by working back to the present from a conceptual point in the future. This initial distancing from the present provides people with the space to learn, free of commitments to action. People learn with the conceptual future about the consequences of their and others' perspectives. This can build new shared understanding.

Third, the research indicates that scenario planning contributes to the creation of a new shared language. A limitation for a group seeking to understand emerging futures can be the lack of terms to

describe those futures (Normann, 2001), which scenario planning can help with. In the EPO case, the scenarios provided a shared language for academics from different geographical areas and research specializations, as well as office staff, to talk constructively about emerging changes in patenting. This was helped by the scenarios being given a colour (blue, red, green or black), which acted as a shorthand for discussions. As an academic from the EPO case noted:

> *"What I see as a big contribution of the study is that it provides a common language, common concepts, and essentially it's a starting point for communication, for speaking about future developments without getting lost in detail and uninformed speculation. So I really think it's supportive of communication in the office, but also in the community. They* [the scenarios] *are anchors for whatever you want to discuss".*

In the OU1 case, the project team was chosen as a cross-sectional and cross-level group from the university and they did not share *a priori* a language to talk about strategic issues. In working intensively for four months with the VCE to develop the scenarios, they created a language that helped them make sense of the turbulence. This extended to the names of the scenarios, which – similar to EPO – acted as a shorthand in discussions. In the OU2 case, the themes of contemporary books were used to illustrate the scenarios. The themes of the books assisted with creating a shared language among the governance groups, but their names did not seem to work as well as a shorthand compared to the EPO and the OU1 case, where the names of the scenarios were generated by the groups themselves. Interestingly, in both the OU cases, the scenario planning process created a language that extended to the methodology itself. One of the OU interviewees described it as giving *"a language to what we were trying to do*". That is, talking in terms of scenarios and 'what if' provided a language for how to engage with uncertainty and turbulence.

The creation of shared language through scenario planning can contribute to building new social capital by enabling communication (Nahapiet & Ghoshal, 1998). When a group seeks to make sense of something new – such as the future of patenting for the EPO or higher education for the OU – they need to create a language to speak about it. The process of creating and using the scenarios, as well as the scenario names, can generate this new language, as was experienced in the EPO and OU cases. In addition, as

people involved in scenario planning are usually from different functional areas, the scenarios enable a shared language across diverse areas.

Fourth, because scenarios are developed and communicated as stories, they provide a set of shared and contrasting narratives which act as a common map for actors to make sense of possible futures. In the EPO case the scenarios were widely regarded as effective in providing a common map, with two leading US academics describing the scenarios in a published paper as "remarkably prescient" (Reichman & Dreyfuss, 2007:106). In addition, only nine percent of the academics surveyed felt that the scenarios had not been successful in providing a shared narrative or common map of possible futures of the global patenting and intellectual property system.

In the OU1 case, among the scenario builders and members of the VCE, the scenarios provided a set of shared narratives about future contexts the university could find itself in. However, many among the wider academic staff regarded the scenarios as too abstract and not well researched (the challenges of creating scenarios in an organization of experts when the expertise of those experts is not drawn upon). Consequently, 61 per cent of the academics surveyed thought the scenarios had been unsuccessful in providing a common map or shared narrative of possible futures facing the OU. However, in the OU2 case, the scenarios were well understood and discussed within the governance groups, thereby providing a set of shared narratives about the future context of the university from which strategic options could be developed. For the wider academic audience, the scenarios were limited to publication on the intranet, which would have contributed to why 51 per cent of those surveyed thought the scenarios had been unsuccessful in providing a common map of possible futures facing the OU.

Scenarios as shared narratives can contribute to building new social capital because stories help groups to make and communicate meaning (Nahapiet & Ghoshal, 1998). In creating and telling stories, people make sense and develop shared understanding. However, as the OU cases indicate, to serve this purpose beyond those directly involved in the scenario planning process, the scenarios must resonate and be accessible and relevant.

Fifth, the scenarios, and the materials used to communicate them, can provide a framework for people not directly involved in their creation to interpret emerging changes. This was particularly evident

in the EPO case, where the published compendium of scenarios and related materials was seen as sufficiently well researched to be used in teaching and research by academics, prompting further sensemaking discussions. In addition, the work led to many invitations for office staff to speak in forums where previously the EPO had no presence (including the annual meeting of the World Economic Forum at Davos). The value of this to the EPO was well described by one of the interviewees:

> *"So as a visiting card it's* [the scenarios] *just unbelievable. I mean we could not afford to accept the invitations that we get...the number of invitations you get to be in certain things is totally disproportionate to what the office could possibly do."*

However, to play this role, the scenarios and the materials used to communicate them must be regarded as good quality and useful. In the OU1 case, academics struggled with some of the features of the scenario booklet that was distributed, such as the use of cartoons. In addition, the scenarios were distributed too late for use by academic units in their annual planning cycle, limiting their value. (In the EPO, synchronicity between the scenario planning process and an internal strategic renewal program was also a lost opportunity for the scenarios to act as an interpretive mechanism within the office.)

In the OU2 round, the use of books to generate the scenarios was a deliberate choice by the facilitator in response to the academics' reaction to the scenarios and booklet in the OU1 case. The use of well-regarded books was judged to be more academically robust. The books did provide an interpretive framework for members of the governance groups, but less so for the broader academic community, who were only able to access a Word document summarizing the books on the intranet.

Scenarios can contribute to building new social capital by providing a shared interpretive mechanism for groups (Nahapiet & Ghoshal, 1998). They do this by acting as a boundary object (Spee & Jarzabkowski, 2009; Star, 2010; Star & Griesemer, 1989). Scenarios as boundary objects provide "interpretive flexibility" (Star, 2010; Star & Greisemer, 1989) for diverse groups to make sense of turbulence in their own contexts. However, as the OU1 case especially shows, the scenarios and their related materials need to be regarded as useful to fulfil this role.

4.2 Structural dimension (patterns of connections)

The structural dimension of social capital refers to "the overall pattern of connections between actors – that is, who you reach and how you reach them" (Nahapiet & Ghoshal, 1998:244). Our research findings indicate that scenario planning can contribute to building the structural dimension of new social capital in two ways.

First, scenario planning convenes groups to develop or use the scenarios and in doing so provides opportunities for people to connect. In the EPO case, 31 academics were interviewed and six were involved in workshops developing the scenarios with office staff. The scenarios were then released and discussed at a forum of approximately 200 people including office staff and academics. These interactive opportunities provided in particular the opportunity to build new connections between the EPO and those academics who were critical of the patent system – academics who had not previously had a relationship with the office. In seeking to incorporate a range of perspectives, the scenario planning process provided a mechanism to reach out and connect. Beyond those academics directly involved in the scenario development process, the survey found that nearly a third of respondents had built new connections as a result of the EPO scenario work. All of these academics felt the connections had led to useful outcomes (including accessing new information, opportunities to collaborate and appreciation of common interests).

In the OU1 case, a team of 23 (including six academics), representing a diagonal cut of levels and areas of the university, were chosen to develop the scenarios in close consultation with VCE members. In addition, four academics provided assistance to the scenario builders as they developed the scenarios; eight were interviewed by the consultant in developing the project; and 24 were part of the University Council meeting that discussed the scenarios as part of their development. The scenarios were then presented to 1500 staff (both academic and non-academic) in 40 workshops across the university. Among those directly involved in the process, the new connections built were among the 23 project team members and with the VCE, as many project team members did not have a relationship with the VCE prior to the project. Among the wider academic community, 13 percent said the scenario planning had facilitated new connections for them. About 70 percent of this group said the main benefits were an appreciation of common interests, access to new information, and opportunities to collaborate.

In the OU2 case, the convenor facilitated discussions with seven VCE members, nine Deans, and 38 academic staff (in three workshops). In addition, eight academics were involved in a University Council workshop to discuss the scenarios while a further 22 academics provided input as part of the scenario planning discussions. The connections built through this round of scenario planning were among the key governance groups, bringing the Deans, for example, into the governance conversations. Among the wider academic community, 12 percent said the scenario planning process had facilitated new contacts for them. A little over 50 percent of this group said it had resulted in an appreciation of common interests and access to new information.

By reaching out and incorporating a range of perspectives, scenario planning provides opportunities for people to build new connections. The connections that are formed can then provide information and other resources (Nahapiet & Ghoshal, 1998) for people, as they did in the EPO and OU. However, as indicated by the survey results, the opportunity to build new connections and access resources seems greater the more you are involved in developing the scenarios, as compared to just using them.

A second way in which scenario planning can contribute to building the structural dimension of new social capital is through design choices to develop and use the scenarios. That is, design choices shape how connections are made (Nahapiet & Ghoshal, 1998). Appendix B provides a visualization of the networks created through the scenario planning processes at the EPO and the OU. In the EPO, most of the academics were engaged through interviews that were subsequently edited and published. The outputs of these interviews were then the subject of workshops to develop the scenarios, with some academics being involved in these. In the OU1 case, the network formed through the development of the scenarios was centred on the 23-member project team and VCE members, with some further academics interviewed. This visualization shows how in the context of all the academics in the university, the percentage of academics involved in the process was relatively small. In the OU2 case, the scenario planning design sought to broaden the involvement of academics, particularly those in governance positions. This is reflected in the network visualization of the OU2 case, with its more dispersed interactions.

Through deliberate design choices, scenario planning configures networks (Nahapiet & Ghoshal, 1998) that influence how people connect and build new social capital. Interactions can be one-off through

interviews, one-off in workshops, or repeated in interactions as the scenarios are developed. These choices provide different social capital building opportunities and resources.

4.3. Relational dimension (type of relationships)

The relational dimension of social capital "describes the kind of personal relationships people have developed with each other through a history of interactions" (Nahapiet & Ghoshal, 1998:244). Our findings indicate that scenario planning can contribute to building the relational dimension of new social capital in two ways.

First, the scenario planning process can signal a willingness on the part of the sponsors to open up the strategy process to experts and stakeholders. This can build trust, which encourages co-operation (Gambetta, 1998) and contributes to building relationships. In the case of the EPO, the scenario planning process was conceptualized by many academics as part of a greater engagement by the office with academics and the external world more generally. A Chief Economist had previously been appointed and the scenario planning resonated with this decision. As one of the academic interviewees noted:

> *"With the academic community I believe there's a vastly increased level of trust in institutions like the EPO. It is a virtue of the fact that the EPO opened itself up to this kind of...exercise. And I think academics see it as an indication that that kind of opening up is responsible."*

For both rounds of the OU process, for those directly involved in the work it was a unique opportunity to work on an important topic – the future of the institution's context – with the senior management team (the VCE). This, too, signalled a willingness by the VCE to engage with a wider number of people in the strategic management of the organization and engendered a sense of two-way trust. However, for the larger academic body in the OU1 case, while the scenario planning process flagged a desire by the VCE to engage staff more generally in strategic thinking, competing messages led to some confusion and doubt. For example, although scenario planning represented a visionary, participative approach to thinking about doing things differently in the future, a number of other equally or more important VCE actions, such as those related to budgeting, seemed to mitigate this.

Through scenario planning, EPO and OU sponsors signalled a willingness to engage with academics

that had not previously been involved in strategic conversations with their organizations. This contributed to building trust. However, both cases show how surrounding messages can reinforce or diminish this new trust.

The second factor concerning how scenario planning builds new relational social capital involves how it is conducted, which can also increase or diminish trust. In the EPO case, the exploration of the content was carried out with limited restrictions from senior management. For example, one scenario contemplated the demise of the EPO, an honesty that was appreciated by some external stakeholders – although the strong IP lobby (including some academics) and some internal staff members were less enthusiastic, not understanding how any organization could criticize its own products and wondering why such considerations were not left to policymakers who had the necessary mandate. What was regarded as openness by some of the external academics was not always so well received by others.

In the survey of the wider academic community, the scenario planning process reflected positively in terms of building trust in the EPO. 57 percent of survey respondents who knew the scenario planning process said it had increased somewhat or significantly their trust in the EPO. For the remaining 43 percent, most said they previously trusted the EPO and the scenario planning had not changed this.

In the OU1 case, the experience for the 23 scenario builders working intensely with the VCE for four months to develop the scenarios resulted in a substantial building of relationships. When the first author interviewed these team members after the initiative, they talked about how the relationships they built through the scenario planning process gave them access to people across the university that they would not otherwise have had. As one of them explained:

> *"Well in terms of the networks that have been created, it's colossal. So even now when there are things I am not sure about how they will play out across the university, I ring and ask them* [other project team members] *what they think and I use them as sounding boards now because we've got that relationship built."*

However, for some of the wider academic staff, the selection process of the project team lacked transparency (they were chosen by the VCE) and was not seen as sufficiently egalitarian, impacting their level of trust in the VCE. Trust levels also seemed to be impacted by the difficulty the academic community

had in relating the scenario planning to their work. The scenarios were developed about the contextual environment of the university, and it was not immediately obvious how they were intended to help academics in their own work, leading to questions about the quality of the judgement of the VCE in sponsoring the work.

As a result, the first round of the work adversely impacted trust levels. Of the survey respondents who were aware of the scenario planning process and had a relationship with the VCE at the time, only seven percent said the scenario planning process had increased their levels of trust in all or some members of the executive, while 37 percent said it had decreased their trust in the VCE. In the OU2 case, and reflecting the scenario planning process's focus on the university's governance groups, only four per cent of survey respondents who were familiar with the scenario work and who had a relationship with the VCE at the time said it had increased their levels of trust, while 19 percent felt it had decreased their levels of trust.

These cases show how the process of conducting scenario planning can contribute to building trust, and the relational dimension of social capital. However, each case also shows how the way work is conducted and the nature of messages surrounding it (given that scenario planning is conducted as a project) need to be managed carefully to maximize this.

4.4. Summary of the findings

This discussion of how scenario planning contributed to the building of new social capital in the EPO and OU highlights the importance of the cognitive dimension. In seeking to make sense of the turbulence, scenario planning provided a range of different resources that acted as a direct investment in building the cognitive dimension of new social capital. First, scenario planning provided multiple frames of the turbulence being experienced in each case and in doing so allowed a range of perspectives to be accommodated and validated. Second, scenario planning provided a safe space within which different, even conflicting, perspectives could be discussed, free of any commitments. Third, the scenario planning process helped to develop a shared language about the emerging situation impacted by the turbulence in each case. Fourth, as scenarios are created as stories, they provided a way of creating and communicating novel and contrasting meaning. And fifth, the research showed how scenarios and their associated

materials can act as boundary objects (Star & Griesemer, 1989), providing a shared interpretive mechanism for making new sense of the turbulence. Combined, these resources contributed to building shared systems of meaning or the cognitive dimension of new social capital.

With this strong focus on the cognitive dimension, the research also shows that to build new social capital the quality of the scenario planning process and the scenarios, their inputs, and the conversations must be high. Otherwise, scenario planning will not be deemed useful and cannot build social capital. This is especially the case for those not directly involved in the creation of the scenarios.

With scenario planning being a direct investment in building new cognitive social capital, the structural and relational developments formed as by-products, as Ostrom and Ahn (2003) indicated they would. In seeking to better understand turbulence and create shared systems of meaning – the cognitive dimension of social capital –the sponsors in the three cases reached out and engaged academics in a range of interactive activities to create or use the scenarios. These activities included interviews, workshops and working groups providing opportunities for participants to connect through the scenario planning, contributing to building the structural dimension of social capital. The analysis of the networks created in each case also points to how deliberate design decisions in scenario planning impacts how people connect and the social capital that can be built.

Similarly, in seeking to make shared sense of the turbulence (the cognitive dimension) and engaging people in this endeavour (the structural dimension), the relational dimension (the quality of relationships) – particularly trust – can be built as a by-product with scenario planning. However, the three cases indicate that the way in which scenario planning is conducted, and the messages surrounding it, need to be managed to align with the sponsors' intent to build this trust.

Finally, the research indicates that new social capital is built more by those who participate in the process of developing the scenarios. It seems learning together is what enables meaning to be co-created. Scenario planning can contribute to social capital being built beyond those directly involved, but the scenarios and their related materials must be regarded as valuable and usable.

5. DISCUSSION

Prompted by Galer (2004a, 2004b) and Kahane's (2004) observations that scenario planning contributes to building new social capital, and our interest in both fields, we set out to research how this occurs. We find that in seeking to address turbulence, those conducting scenario planning reach out and engage others to make new sense. This sensemaking process activates a set of resources that in effect are direct investments in building the cognitive dimension of new social capital, enabling the structural and relational dimensions to be built as by-products.

Because of the importance of the cognitive dimension, our findings provide further evidence of the value of learning for creating new social capital. Scenario planning explores the complexity of turbulence in the present from a point in the conceptual future (Normann, 2001). By definition, there are no facts about the future, which requires instead a learning stance based on exploration and storytelling (Boje, 1991). Developing and using scenarios provides such a learning process, engaging a diverse set of actors and enabling their perspectives to be shared, explored, and learnt from. As we saw from the three cases, this process, especially for those directly involved in developing the scenarios, provides a rich learning environment, contributing to the formation of new social capital.

Our research also provides support for the value of temporality in building new social capital. While the conceptual past has been used to build new social capital (Sabel, 1993), our findings show the value of using the conceptual future. Scenario planning is a form of prospective sensemaking (Wright, 2005), where people can travel into the future using the scenarios and track back to the present to see it in a new light. Sensemaking is a retrospective activity because it is only once events have passed that we are able to step back and assess what has occurred – to make sense (Weick et al., 2005). Our research also shows the safety afforded by the conceptual future, providing a transitional space (Amado & Vansina, 2005) for people to engage, free of any commitments to action. In addition, the use of the words 'optimistic' and 'energizing' in the first OU case indicates the conceptual future can also provide a positive environment for engaging people and creating new social capital.

Scenario planning can also help overcome the challenges of lock-in associated with building new

social capital. Our research suggests that cognitive lock-in can be addressed when scenario planning provides the resources for actors to reframe the present and to create new systems of shared meanings; the structural constraint can be addressed by engaging new actors in developing the scenarios, and through sharing thought leadership with others via the published scenarios; and relational lock-in can be overcome by providing the opportunity for new relationships to be tested and developed in the production and use of the scenarios. However, scenario planning is typically conducted as a time-limited project, and as one of the OU interviewees observed, the social capital that is built can *"leak away very quickly if you don't maintain it*." Unless further actions are taken, prior issues of lock-in may resume.

For scenario planning research, our findings suggest there is a 'return on investment' (of funds, time, and resources deployed to undertake scenario planning and to use the scenarios) in the form of new social capital. This has sometimes been referred to in passing as an advantage, but not taken as a calculable value that would warrant undertaking scenario planning in the first place. Counting in the generation of new social capital as a core reason to carry out scenario planning would address claims sometimes made in the literature (e.g. Molitor as cited in Inayatullah, 2009) that scenario planning is not worth the time or effort. Scenario planning may be an effort and an expense, but if it develops novel social capital that can be used to address or even counter the build-up of turbulence, that investment is worthwhile.

For social capital research, our findings indicate that new social capital can be purposefully built with the help of scenario planning. Our research indicates that in knowledge-intensive situations (Nahapiet & Ghoshal, 1998), leading the creation of new social capital with the cognitive dimension is effective, enabling the relational and structural dimensions to emerge as by-products. In addition, with the help of scenario planning, our research suggests that leading with the cognitive dimension can speed up the building of new social capital to address turbulence, taking months rather than the centuries Putnam (1993) or generations Emery and Trist (1965) indicated were needed.

5.1. Points of consideration for leaders and facilitators

Our research findings point to four considerations for leaders and facilitators wanting to deploy social capital for the purpose of building new social capital.

5.1.1. Attend to key leverage points in the social systems being engaged: The extent to which attention is given to leverage points which can amplify the impact of the new social capital appears to be an important design condition for success. We found that it is critical to decide who to involve, when, and how in the scenario planning intervention. This is consistent with Kilduff et al's (2006: 1032) views of organizational networks as complex adaptive systems where "small investments in social ties can produce large returns to social capital." This attentiveness includes understanding where innovation and power in a system are located, and how key decisions are made.

5.1.2 Focus on translating rather than communicating the scenarios: We see from the research that those not directly involved in the scenario planning process often do not experience the same social capital benefits as those deeply involved in the intervention. Our research suggests that to increase the effectiveness for those not directly involved, translation (Czarniawska & Joerges, 1996; Latour, 2005) rather than diffusion (Rogers, 2003) needs to be emphasized. Diffusing focuses on one-way communication, whereas translation provides a safe transitional space for actors to use the scenarios as boundary objects to create meaning in their own specific contexts. To promote translation, the value of the content, the design features of the materials, and the minimization of competing messages need to be carefully attended to so that they are aligned with the "purpose at hand" of end users (Schutz as quoted in Czarniawska & Joerges, 1996:28).

In this regard, the EPO compendium worked far better than the OU materials as boundary objects with wider academic groups because it more readily enabled users to translate the contents of the work into their specific contexts – such as being useful as teaching materials.

5.1.3. Choose the framing roles of the scenario planning carefully: Signalling that turbulence represents a significant opportunity, or a crisis that may well disrupt the normal flow of things, renders taken-for-granted frames problematic. The disruption can be addressed through involvement in scenario planning as a learning process (Barton & Sutcliffe, 2009) that assists with reframing, which then enables reperception (Ramirez & Wilkinson, 2016). This learning-through-reframing may be a good strategy where complacency with existing frames is endemic and needs to be unsettled, and/or when alternative framings are dismissed out of hand without proper analysis – one of the reasons the EPO undertook their scenario planning.

However, the downside of this approach is that those who are already innovating and engaging with change through other processes and ventures can feel ignored. Or they may think that the scenario planning process will offer them very little or even take away resources from their own, ongoing, reframing initiatives. Others can feel apprehensive or disengaged if they are not provided with the safe space and opportunity to understand the potential or actual crisis that remaining within an existing frame might entail. This reaction was evident in the wider OU academic community.

Scenario planning can instead be presented as an opportunity for organizations to build on the positives (Cooperrider & Srivastva, 1987; Pascale et al., 2010) or to reinterpret and reposition the core ideology (Collins & Porras, 2005) or mandate to render it more robust for future circumstances. This 'positive' form of safe space would seem to be a particularly helpful approach for organizations that have strong and unifying mandates that can be positively leveraged. For example, in the OU, staff members are committed to the university's mission (providing the opportunity for anybody to access higher education), which in their minds provides a clear rationale for the existence of the university and the focus of subsequent strategies. To build on this strength, scenario planning could have been framed as a process for better understanding the turbulence so the organization could continue to deliver its mission successfully into the future. In this way, the dominant paradigm or worldview could have been more gently re-perceived (Wack, 1985b).

5.1.4. Attend to the consequences of scenario planning as a project for building new social capital: Bourdieu (1986:249) argued that social capital is not a natural or social given and must be achieved through

"endless effort at institution". Without such on-going institutionalization efforts, newly built social capital can quickly fade away into weak, sporadic, limited, and historical individual contacts. The limits of scenario planning interventions to overcome the dynamic conservatism (Schon, 1971) of existing configurations of social capital must be acknowledged and addressed, particularly once the project ends.

This possibility was identified in the EPO case, where concerns over the mandate and growing workload within the office threatened the development of ongoing mechanisms for capitalizing on the new social capital. Similarly, it was a possibility after the OU2 round of scenario planning, particularly once the Vice Chancellor who introduced the scenario planning process stepped down and was replaced.

6. Conclusion

Our research has shown how scenario planning can contribute to the building of new social capital, providing a scholarly explanation for Galer (2004a, 2004b) and Kahane's (2004) practice-based observations. By learning with the conceptual future, scenario planning generates a range of resources – multiple frames, a focus on the conceptual future, shared language, scenarios as stories, and scenarios as boundary objects – that are a direct investment in building the cognitive dimension of social capital, enabling the structural and relational dimensions to emerge as by-products of this process (as the literature suggests is how they are formed).

For scenario planning research, our findings suggest that considering the new social capital formed in a scenario planning project provides another quality criterion by which to judge the work and the investments it involves. While scenario planning can be regarded as a significant investment, if it results in new social capital that can be used to address or even counter the build-up of turbulence, it is worthwhile. For social capital research, our findings support the importance of the cognitive dimension in knowledge-intensive (Nahapiet & Ghoshal, 1998) situations. By leading the building of new social capital with the cognitive dimension, our research provides further support for the finding that new social capital can be generated more quickly than Putnam (1993) or Emery and Trist (1965) indicated.

However, the research is not without limitations. This is an exploratory study limited to two organizations in the public sector. While generalizability has been enhanced through linking the findings to

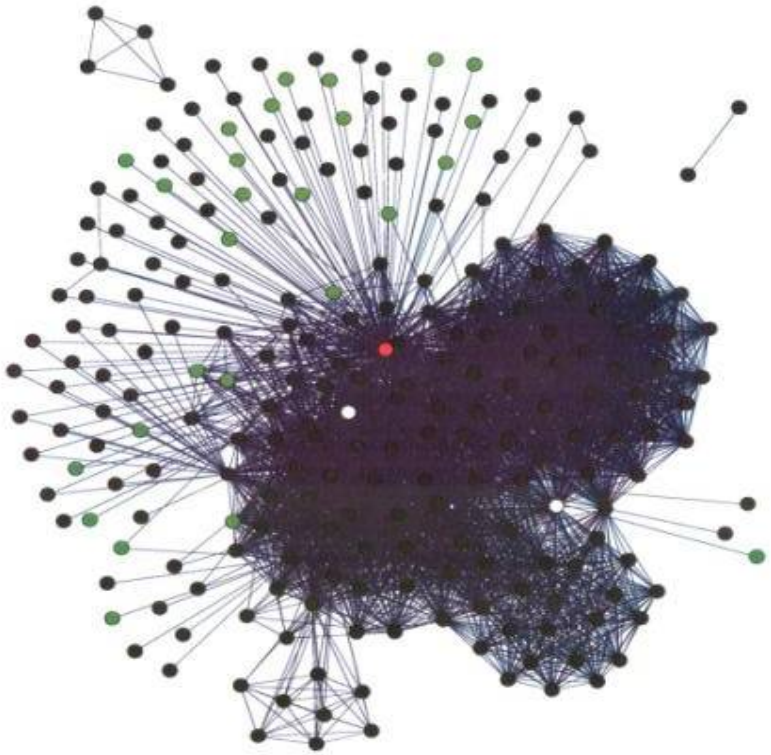
theoretical concepts (Eisenhardt, 1989), further empirical work in other settings would add to our understanding of this important and under-researched aspect of scenario planning.

APPENDICES

Appendix A. Summary comparison of the cases

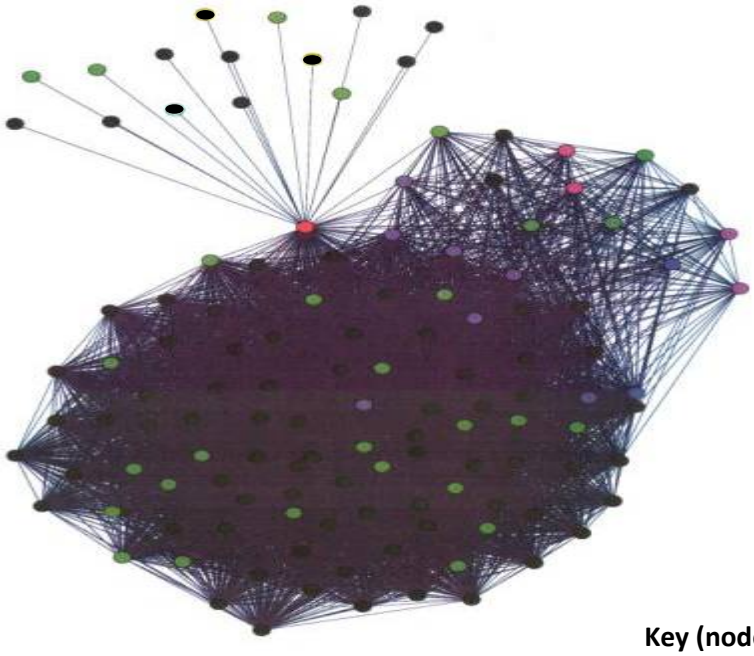
	EPO	OU1	OU2
Sponsor	President of the Office	Vice Chancellor	Vice Chancellor
Duration	2004-2007 (30 months)	2002-2003 (7 months)	2005-2006 (6 months)
Topic	Future legitimacy of the global patenting system	Changes in higher education	Changes in higher education
Process	Interviews (internal and external to gather data) Workshops to develop and discuss scenarios Small groups to develop each scenario Launch of scenarios, distribution of compendium and presentation of scenarios	Scenarios developed by a cross-institutional team guided by a consultant published in a book and presented to 40 units	Scenarios developed by consultant (based on four books) by consultant moving between different layers of the university. Strategic options developed in tandem
Total number of participants	245	124	290
Written outputs	Interviews published (2000 print run) 20,000 compendiums printed and distributed internally and externally Executive summary printed External and internal website Presentations at various external forums	Compendium distributed throughout the university. Scenarios discussed at unit level, contributing to the OU Futures document with a series of 'strategic forums' being established	Document available on intranet with strategic options that were reflected in OU Futures and unit plans

Appendix B. Network visualizations



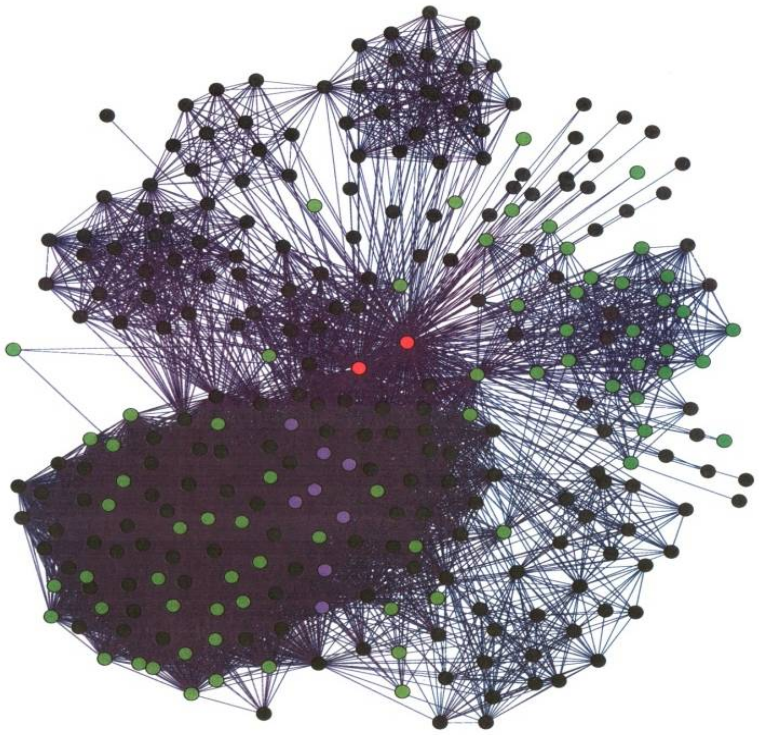
Key (nodes):
Red = facilitator
Green = academics
White = external consultants
Black = non-academics

Figure 2. Network visualization of the EPO scenario planning process



Key (nodes:
Red = facilitator
Green = academics
Purple = VCE members
Black = non-academic staff
Pink = external thought leaders

Figure 3. Network visualization of the OU1 scenario planning process



Key (nodes):
Red = facilitators
Green = academics
Purple = VCE members
Black = non-academic (staff and external interviewees)

Figure 4. Network visualization of the OU2 scenario planning process

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