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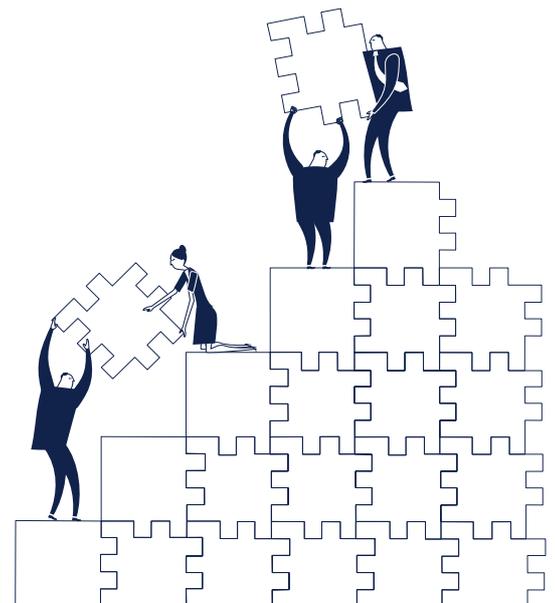
Scenario Cranes to Build New Cognitive Social Capital

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SCENARIO CRANES TO BUILD NEW COGNITIVE SOCIAL CAPITAL

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Abstract

This paper reports exploratory research on building new social capital with scenario planning. The key finding is that scenario planning can be deployed to build new social capital. This is done through a counterfactual process analogous to Normann's proposed "crane building" whereby a contrasting set of conceptual futures are engaged to reframe the understanding of the context in the present. The emphasis on the conceptual future using scenarios means it is with the cognitive dimension that social capital is built, which has been under-explored in the literature. This paper thus makes three contributions: It provides an empirical example of what Normann proposed; it sheds light on what Maurer and Ebers (2006) termed the "dearth of research" about how organisations can build and reconfigure social capital to address changing strategic circumstances; and it foregrounds the cognitive dimension in building new social capital.

Keywords

Scenario planning, building new cognitive social capital, conceptual cranes, Richard Normann

INTRODUCTION AND PURPOSE OF THIS PAPER

It is a little over a decade since the influential Scandinavian management thinker and educator Richard Normann died. In the foreword to one of his last works, *Reframing Business*, which was adopted as a master's level course textbook at the University of Gothenburg, Henry Mintzberg referred to Normann as "a great theorizer, an intellectual presence with about as fertile a mind for inferring concepts from practice as anyone I have read in this field" (x:2001). Despite the regard in which Normann, and especially this last substantial piece of work in his lifetime are held, there has been surprisingly little linking of his ideas to mainstream management research. In this paper, we seek to rectify this situation by showing that one of the richest ideas in the book - designing and building intellectual "cranes" to reframe perceptions on the present from the vantage point of the conceptual future - provides an explanation for how new social capital can be built more quickly in contexts where managers need to address turbulence.

Turbulent (Emery & Trist 1965) or hyper velocity (Bourgeois & Eisenhardt 1988) environments are characterised by rapid and discontinuous change. The creation of new social capital enables actors to reach out to others to create common ground and find ways to address the turbulence together (Ramirez et al. 2010). Collaboration – or "working together" (Heckscher 2007:2) – was regarded by Emery and Trist and their students (Ramirez & Selsky, forthcoming) as a good approach for dealing with turbulence given further independent action (such as through competition) might well exacerbate it.

Normann's proposed 'crane' provides an explanation as to how new social capital is built in this context. In *Reframing Business*, he suggested that scenario planning was a process for creating such a crane. In turbulent environments managers can use scenario planning to shift to the vantage point of the conceptual future from which they can see the present from a different perspective.

In turbulent environments, managers can use scenario planning to better understand their context to improve planning (Ramirez et al. 2008; 2010). Building scenarios about future plausible contexts of an organisation also helps the managers to ask 'what if', to appreciate their own views and their underlying assumptions, to re-perceive options (Wack, 1985) and to put in place new strategies and contingencies for addressing the turbulence.

In this paper, we seek to show how building and using scenarios – as cranes - enables managers to reframe the perceptions they have held on the present from the perspective of the conceptual futures the scenarios offer; and through the process, to generate new social capital for doing better in turbulence.

In particular, we report on exploratory research comparing scenario planning by the European Patent Office (2004-2007) and The Open University in the UK (2002 and 2005) to suggest that scenario planning can entail aspects which, in effect, are direct investments in creating cognitive social capital (Nahapiet & Ghoshal 1998) resources. These new social capital resources can help make new sense of turbulence by enabling shared meanings to be created - directly building the cognitive dimension of new social capital while enabling the more researched structural and relational dimensions to be built as by-products.

Our findings suggest that social capital can be built more quickly than researchers have previously thought. By directly investing in the creation of new shared meanings, scenario planning can build new social capital faster than the centuries that Putnam and generations that Emery and Trist suggested were needed.

The paper is organized as follows. First, the literatures on building social capital with scenario planning are briefly overviewed. Then we explain the research design and the cases, and present the results of the research. We end with a discussion of the contributions this research makes.

BUILDING NEW SOCIAL CAPITAL WITH SCENARIO PLANNING

The building of social capital has not been extensively explored in the literature (noted by Adler & Kwon 2002; Bolino et al. 2002; Edelman et al. 2004; Ellinger et al. 2011; Pastoriza et al. 2008). This is despite the earliest mentions of the term being specifically in reference to its building (see Hanifan 1916). Consequently, scholars such as Nahapiet (2008:599) argued that “we have much to learn about building social capital”, while Dolfsma et al. (2009) spoke of the need to open the ‘black box’ of how social capital emerges.

The premise of social capital is that investing in social relations produces beneficial returns (Lin 2001) “enabling individuals and social groupings to achieve outcomes they could not otherwise achieve, or could only do so at extra cost” (Coleman, Burt & Putnam as cited in Nahapiet 2009:207). Maurer & Ebers (2006) suggested that an organisation’s ability to build new social capital is positively correlated with success.

Nahapiet and Ghoshal (1998:243), in the most cited social capital article in organisational studies 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”. They articulated three dimensions. The *structural dimension* of social capital which refers to what can be obtained in any situation through accessible networks of relationships; the *relational dimension* of social capital which refers to the quality of relationships in one’s network affecting outcomes; and the *cognitive dimension* of social capital which refers to shared systems of meaning easing communication and interpretation among a group of actors. Nahapiet and Ghoshal (1998) identified shared language, codes, and narratives as essential creators of social capital given their importance for facilitating communication.

The cognitive dimension has not been sufficiently explored in the literature and yet it is implicit in many well-known descriptions of social capital. For example, Putnam’s (1993) work underlined the possible benefits of multiple cross-cutting associations being the creation of trust and shared systems of meaning, facilitating communication and joint interpretation. Bourdieu (1985) also indicated that shared systems of meaning are important aspects for elite group membership and its culture’s reproduction. Burt (2010) rethought the benefit of brokerage across ‘structural holes’ in networks to be not increased information but the cognitive and emotional skills produced in the process.

One of the key issues 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 (1985:249) and Maurer and Ebers (2006) argued that social capital can be deliberately built. Yet Coleman (1988) and Baker (2000) defended the by-product view. The literature thus supports both positions (Nahapiet 2008; 2009) and doesn’t find for either exclusively; suggesting that some forms of social capital are more amenable to

being directly built than others (Ostrom & Ahn, 2003). Ostrom & Ahn argued that reciprocity, trust, and networks are more likely created as a by-product of activities; while institutions, with their focus on “crafting rules”, can be more directly created. As they wrote (2003:xxxi): “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”.

Similarly, scenario planning activity is in effect a direct investment in creating new cognitive social capital resources. These resources are created as the scenario process articulates new conceptual framings and possibilities for the future, reframing the present situation from a unique, purpose-built, set of perspectives (Normann 2001). For Normann, scenario planning is a conceptual crane that helps those it serves to reframe their views of the present from the perspective of the conceptual future.

Normann (2001) used two dimensions to describe how every-day cognition could be reframed. The first is *conceptual time* and is manifested in the past, the present and the future. The second is the *conceptual level* that concerns a higher logical system level and a lower system level of analysis than the one used ‘every day’. Of the nine resulting conceptual boxes, Normann (2001:200) argued that a higher level of aggregation in the conceptual future was “the area most likely to hold the potential for discoveries of reframing our business, to reflect the opportunity and imperative of reconfiguration”. This is the sphere in which scenario planning operates – thereby offering a crane to this important vantage point.

Reflective scenario planning practitioners (Schön 1983) have suggested scenario planning builds new social capital. For examples, Galer (2004a, 2004b), reflecting on the scenario planning in the transition from apartheid in South Africa questioned whether a major outcome of this work wasn’t the networks and the myths (supplied by the scenarios) that were created for the long term. While Kahane (2004:35) who facilitated one of the most well-known of these initiatives, the Mont Fleur Scenarios, observed that the process contributed to the building of a “cross-sectoral network of trusting relationships – what Robert Putnam calls social capital” contributing significantly to the peaceful political transition in South Africa.

As a conceptual crane, scenario planning provides multiple representations of possible future contexts faced by an organisation so that managers can better consider 'what if' questions (van der Heijden 1996; 2005) from these vantage points. It foregrounds uncertainty and unpredictability, helping actors to appreciate the causal textures of turbulent environments (Emery and Trist, 1965; Ramirez et al, 2008). Thus, it is through the creation and use of scenarios that new systems of shared meaning are created; in effect purposefully building the cognitive dimension of new social capital. This suggests that the more researched structural and relational dimensions emerge almost as inevitable by-products.

Our research indicates that in the context of making sense of perceived or potential turbulence, leading new social capital formation by investing in the cognitive dimension (as compared to the structural or relational) may be the most effective way of doing so. By directly investing in the creation of new systems of shared meanings, we propose that scenario planning can build new social capital more quickly than the centuries that Putnam (1993) and generations that Emery and Trist (1965) said are needed to build it. This is important in the context of turbulence where new social capital may be needed quickly.

In the following sections we report on research in two organisations which experienced building new social capital with scenario planning. In particular, we explore how Normann's conceptual crane provides a scholarly explanation for understanding how scenario planning can directly build new cognitive social capital in the context of addressing turbulence.

RESEARCH DESIGN

Case study research (Flyvbjerg 2011; Yin 2003) has been extensively used to research social capital building (see Bowey & Easton 2007; Dowla 2006; Melander & Nordqvist 2002; Pedler & Attwood 2011; and Kinnie 2003). In this research, two in-depth case studies (Yin 1994; 2003) were used to: facilitate a deep understanding of the scenario planning in each organisation; to observe new social capital formation over time; and to obtain a comparison.

Cases

The two cases were the scenario planning work of the European Patent Office (EPO) and The Open University (OU) in the UK. As there were two rounds of scenario planning in the OU (2002 and 2005), a third point of comparison is included.

The leadership of both organisations were experiencing turbulence: for the EPO the challenges of a changing Europe and the rise of a knowledge economy and international trade was in the process of building up an international 'patent warming' period (McGinley, 2008); and for the OU the changes in on-line higher education, heralded subsequently by the emergence of MOOCs, forced it to reconsider its business in a changing global environment.

The unit of analysis in all three cases was social capital links within each case. This choice was based on the accessibility, usability, variance and comparability of the data. Thus, 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 was a deliberate effort to reach out and engage academics; an initiative to provide thought leadership in the global patenting and intellectual property area; to bring in voices that had for a long time remained, and been considered, external to the EPO; and to develop with them and across the Office shared understanding of a small set of alternatives that the future might hold.

In the OU cases, the focus was on the new social capital built between the Vice-Chancellor's Executive (VCE) – those responsible for the scenario planning and the university's strategic direction – and the university's own academic community. Academics were 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 organisation.

An overview of the cases is outlined in Table I.

Table I. 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, fed into OU Futures and a series of 'strategic forums' established	Document available on intranet with strategic options that were reflected in OU Futures and unit plans

Research methods

The following methods (as outlined in Figure I.) were used to ensure the veracity of the data within and across the cases.

Figure I. Overview of research methods



1. Interviews: 70 semi-structured in-person and phone interviews were undertaken with those involved in the scenario planning (35 from the EPO case and 35 from the OU cases) based on sensitising concepts (Denzin as cited in Patton 1990) from the literature. Interviewees included sponsors and those working in the core scenario project team; and then those from the relationship between investigated 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: organisational positions; geographical areas; academic disciplines; and who participated in different parts of the scenario planning process.

The interviews were coded and analysed using NVIVO software. This analysis was guided by pattern matching (Yin 2003) to enable rival explanations among the independent variables (aspects of the scenario planning) that were particularly important in understanding how the deployment of the work impacted the building of social capital in each case.

2. Survey: To understand the impact of the scenario planning beyond those directly involved, two electronic surveys were undertaken of the wider communities (the academics) also based on sensitising concepts from the literature. 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 OU cases, the invitation to complete the survey was sent by the University to all (1068) academic staff and resulted in 209 responses.

While sensitising concepts were used to structure the interview guide and the survey, they were aimed at providing an initial starting point for exploration. However, once out in the field, the primary researcher (first author) was attentive to understanding other emergent factors. Thus, the findings reported in the next section do not all have relevant data from the survey. Instead, these findings emerged through the interviews and a review of the documentation.

3. Review of written documentation: These included file notes, journal articles, internal communication documents, project reviews and invitation lists.

4. Respondent validation: To seek accuracy on the feedback 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 EPO at the time (the Chief Economist) and the convenor (the specialist scenario planner brought in to lead the work). In the OU case, 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 team.

5. Case and method comparisons: Finally, the data was analysed first within the cases (to gain a good understanding of the unique properties of each) and then across them (to determine similarities and differences) (Eisenhardt 1989). In addition, similarities and differences were sought across the data sources (interviews, surveys and written documentation) to maximise triangulation so that the data could be investigated from different perspectives – regarded as a useful technique in exploratory research (Glaser & Strauss, Eisenhardt and Sole & Edmondson, as cited in Swan et al. 2010).

FINDINGS AND DISCUSSION

This first section - findings - presents the results of the research – how scenario planning builds Normann’s conceptual cranes to create new social capital and where new social capital was built as result. The second section – discussion - discusses three contributions this research makes to the literature.

Findings

1. How scenario planning builds Normann's cranes, creating new social capital

To recap, Normann called for the building of a conceptual crane to transport people to a higher level of analysis and into the conceptual future so as to reframe the views users of the crane hold of the present. We observed through the research five ways in which scenario planning does this, and in doing so leads the building of new social capital with the cognitive dimension. These are described below with a categorical analysis provided in Appendix I.

First, scenarios provide alternative frames on the present from the perspective of the future. Scenario planning accepts the inherent, unpredictable 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 this encourages engagement from different actors as they do not have to agree with each other. The explicit consideration of multiple frames enables rather than closes down conversations – evident in both cases among those building the scenarios and those actively using them. As an OU interviewee 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."

Normann said that it is impossible to speak of innovation without inventing new words – old words cannot describe what is new unless they acquire new meanings (think of 'tablets' at the top of a mountain or at the end of a WIFI connection). Accordingly our second finding is that scenario planning typically produces new shared terms, unheard-of vocabulary or metaphors, and new understandings of old terms. As scenarios deal with situations which where there is "a surfeit of information and a deficit of meaning" (Brown et al. 2009:329), it not entirely surprising that our research indicates that in the process of making

meaning, new wording is created to help structure the situation (Normann 2001) by making it more comprehensible. For example, an academic in 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 OU case, the creation of new language was particularly evident among those creating the scenarios: members of the VCE and Deans. Interestingly, this extended to how the use of scenario planning was itself talked of. Said one of the OU interviews:

“It is now very familiar all over the university to say ‘well we better think about some scenarios here, what would we do if’? So because we’ve been through those two exercises, it’s quite a familiar methodology for us now and it allows us to think in ways I don’t think we would have thought before. I think we’re much more comfortable perhaps than we were ten years ago certainly with just running the world forward and asking how we perform in this or that sort of world”.

Third, the completed scenarios provided a set of shared narratives helping actors make sense of the range of possible futures. Two leading US IP academics described the EPO scenarios as *“remarkably prescient”* (Reichman & Dreyfuss 2007:106) and a number of the interviewees commented on the value of compiling and publishing the conversations with experts and stakeholders. As a result only 9% of academics responding to the survey and who knew the EPO scenarios felt that the scenarios had not been successful in providing a common map of possible futures of the global patenting and intellectual property system.

In the OU1 round, the scenarios provided a set of distinct but shared narratives about future contexts for those directly involved in the process (i.e., members Vice Chancellor’s Executive, some Council members, and those responsible for the scenario planning in the Futures Office). But many in the wider academic staff regarded the scenarios as not well researched (perhaps partly because internal expertise was not drawn upon) and as having names that did not resonate (e.g., Patchwork). Consequently, 61% of survey respondents thought the scenarios had been unsuccessful in providing a common map of possible futures

facing the OU. This majority score was exacerbated by the timing of the scenario planning: it was completed too late for use by Units in their annual planning cycles.

In the OU2 round, the scenarios were well understood and discussed within the governance groups set up for the scenarios initiatives. They thus provided these groups with a set of shared narratives about the plausible future contexts the university might inhabit. However, for the wider academic audience, the scenarios were available only on the Intranet, which may explain why 51% of academics surveyed thought the scenarios had been unsuccessful in providing a common map of possible futures facing the OU.

Fourth, scenarios and how they are communicated can act as a boundary object (Star & Griesemer 1989; Spee & Jarzabkowski 2009) – especially for those not directly involved in their development – between the possible future and the inhabited present. To play this boundary object role, the scenarios must be valued and used – as succinctly noted by an OU interviewee:

“If the products, if the outcome doesn’t seem to touch you deeply, then you’re not going to be impressed with it; which means that the people that it came from notionally carry less capital for you. I mean if social capital grows through one group sharing something that’s of value with another group, then the value is a key variable. You know, if I do something for you and it has no real meaning, then I haven’t built much social capital there.”

In the case of the EPO, the scenarios have been used in many different external fora (e.g., journal articles, teaching, conferences, and meetings). This was facilitated by the EPO having published a comprehensive compendium incorporating a number of deliberate design features. While for a few academics the compendium was regarded as a little “*too magaziney*” most regarded it as “*very complete*” - containing nearly 600 footnotes and references. Consequently, 75% of survey respondents said they had used or planned to use the EPO scenarios compendium in their work - teaching, research, etc.

In the OU1 round, the scenarios were distributed in a booklet later referred to as ‘the black book’ and combined systems diagrams, cartoons and the scenario stories. These different presentation formats sought to cater to different audiences and learning styles – as an interviewee said, as providing “*multiple ramps*” to the material. However, academics struggled with the cartoons which they regarded as not sufficiently serious compromising the efficacy of the boundary object role the scenarios played.

In the OU2 round, four published books were used to manifest each of the scenario worldviews, regarded as a better way to connect with academics. This innovation helped with the boundary object role for those who received the books along with the scenarios; but as neither the books or the scenarios were widely distributed, most academics relied on a one-and-a-half page text summary per scenario placed on the intranet, this compromised boundary object efficacy more broadly.

Finally, scenario planning's small set of plausible conceptual futures provides a 'safe' space from which an individual or group can consider possible changes. These futures together manifest a safe space because they act as a transitional space (Amado & Vansina 2005) that: relocates mindfulness away from current arrangements and concerns; allows space and time and 'permission' to 'play' and understand the implications that the turbulence might imply; and doing this free from commitments to action and from path-dependency inertia or 'dynamic conservatism' (Schön 1971). As one of the academic EPO interviewees noted:

"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".

The EPO had seen that debates on patenting and intellectual property had become very bipolar - between those for and against the survival of a formal patent system. Their scenario planning enabled deeper and more nuanced dialogue. The 110 external interviews they involved and the four scenarios they produced enabled incompatible viewpoints to be considered in depth and held as plausible if different things came to pass and holding different views side by side became possible. In the OU, working through future implications of the changing higher education context for the university empowered those most directly involved in the work, but increased levels of anxiety for others not involved (the context is significantly changing and the university has to change too) who could constructively work the implications out in developmental, rather than regressive, ways (Winnicott, 1965). The common language and shared cognition allowing for incompatible views to be understood and appreciated and manufactured in this way helps the structural and relational aspects of social capital to develop faster and easier, as their unfolding is

rendered unimpeded by misunderstanding of terms nor are they slowed down by partial and unshared connotations.

2. What new social capital was built by the scenario planning?

The three cases discussed above indicate that creating and using scenario planning as cranes can help build new social capital in some places, but not in others. Scholars have argued that social capital is likely to be built around 'meaningful' issues and/or activities (e.g., Baker 2000, Cohen & Prusak 2001, Hanifan 2003, Kostova & Roth 2003) that catalyse actors to engage each other. Scenario planning offers three 'meaningful' ways to build new social capital: relevance, resonance and responsibility (Lang 2012). Evidence of these in each researched case is summarized in Table II.

Relevance refers to the degree to which the scenario planning is regarded as pertinent to the issue and user and the extent to which it is useful. Perceived usefulness prompts users to engage with the scenarios in their work and this often builds new social capital. Resonance refers to the extent to which scenario planning is acceptable. Where there is a lack, actors are likely to disengage. In the EPO for example some actors had reservations as to whether the work was consistent with the mandate of the Office, and this lack of resonance had to be addressed head on by the scenario planning champions through meetings and workshops and individual chats.

Responsibility manifests as the investment (in time, personal credibility, etc.) required to produce successful outcomes. Our research suggests that responsibility for scenario outcomes is not an essential factor for building social capital. For example, if the outcomes are perceived as relevant, scenarios can still engage actors and aid in the building of new social capital, as was evidenced in the EPO case where academics and EPO professionals took the time, with the help of the scenarios, to help each other.

Table II. Examples of what new social capital was built

	EPO	OU1	OU2
	Relevance		
New social capital built	Academics (especially those with a more critical perspective of the patenting system) who found the materials useful for teaching, research and policy advice	VCE, Council members and the Planning Office who used the scenarios in strategy deliberations	Key governance groups (VCE, Deans, Sub-Deans, Council members) who developed and used the scenarios in strategic planning
No new social capital built	The legal community and traditional IP scholars who already had links with the Office and were embedded in traditional ways of thinking	Academics who struggled to see the connection of the scenarios with their work	Academics who struggled to see the connection of the scenarios with their work
	Resonance		
New social capital built	Those academics with less prior engagement with the EPO, who regarded the project as fair (with the Office taking on critical perspectives) and more evidence of the Office opening up	Project team members, VCE and Council members as well as academics with an interest (and in many cases responsibility) in strategic as compared to operational planning	Wider governance groups (e.g. Deans) who were more significantly involved in the process (as compared to the OU1 round)
No new social capital built	Academics and EPO staff who felt it was not the mission of the Office to undertake such a study	Academics (e.g. in economics, politics, etc.) who were not consulted during the production of the scenarios and doubted the research on which the scenarios were based	Academics for whom what was intended with the scenarios did not fit with competing messages from the VCE
	Responsibility		
New social capital built	The facilitator, project team, key Office sponsors and academics involved in the process and who used the scenarios in their work	The facilitator, project team, VCE members, and Planning Office staff who had responsibility for producing and disseminating the work	The facilitator, VCE members, Planning Office staff, Deans responsible for producing, disseminating and using the scenarios
No new social capital built	Those EPO staff not involved in the project or using the scenarios	Deans and academics in the faculties who experienced the scenarios as a 'roll out'	Those academics not involved directly in the project or using the scenarios

Discussion

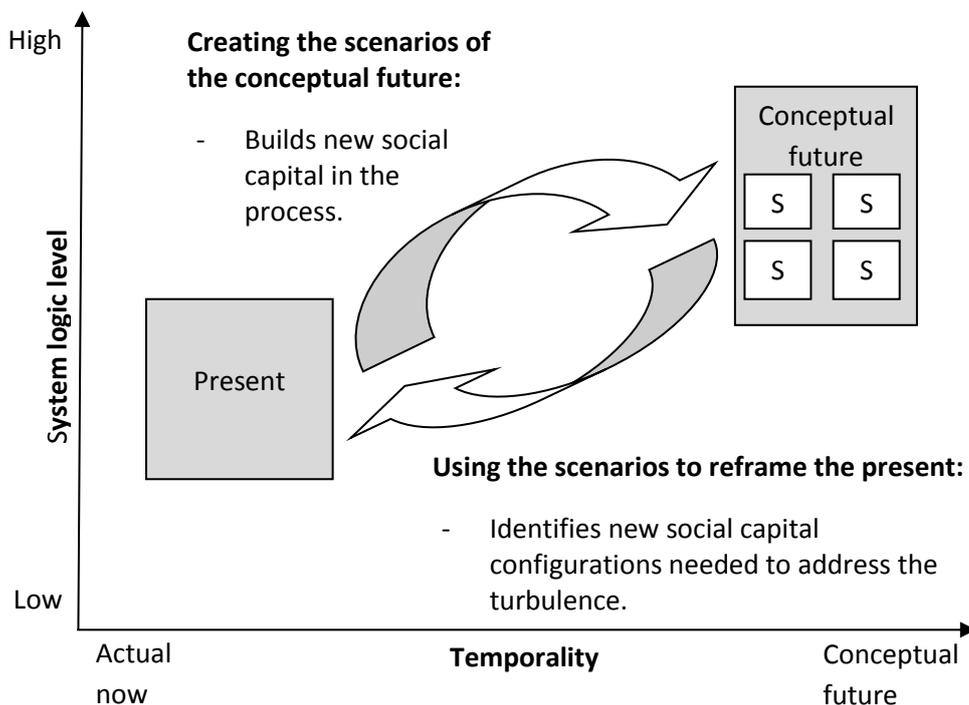
In this section we discuss three contributions the research makes to the literature.

1. Normann's crane explains how new social capital is built with scenario planning

Present understanding manifested in established mental maps is hard to escape. As stated earlier, Normann (2001:182) used the metaphor of building a 'crane' to describe how managers in organisations can purposefully design and build ways to leave current understanding temporarily and consider the merits of different conceptual viewpoints. This paper examines how two organisations did exactly this, and with what results. The empirical evidence we presented highlights how bringing forth the higher logical typing (Whitehead and Russell, 1910) conceptual future with scenario planning cranes builds new social capital in turbulence.

The cranes afford new viewpoints which are otherwise unavailable; the hooks of the cranes enable minds to lower themselves into what the scenarios frame and help attend to, to explore their implications 'on the ground', and by backtracking to the present, to identify what new social configurations might lead to more effective action (see Figure II).

Figure II. Scenario planning building Normann's cranes and creating new social capital to address turbulence



Scenario planning is a form of prospective sensemaking (Wright 2005) where the hook of the cranes helps the mind to test alternative future perspectives in the present and to 'reframe the landscape with this map' (Normann, 2001). Weick et al. (2005) thought sensemaking a retrospective activity because it is after events have passed that people can step back and assess what has occurred – to make sense. But the crane suggests that scenarios can enable prospective sensemaking because the present is retrospectively viewed from the vantage point of the conceptual future, and at a higher logical typing level that allows the viewer to assess the future context of the issue as well as the actual issue in question.

Thus, a key finding of the research we report here suggests that in situations where new sensemaking (Weick 1995) is called for, such as in turbulence (Ramirez et al, 2010) - scenario planning can act as a direct investment to build new cognitive social capital.

2. How scenarios can speed up the building of new social capital in turbulent conditions

The importance of cognitive social capital in situations where there is a premium on sensemaking does not mean the other two aspects of social capital are redundant. Nahapiet and Ghoshal (1998) demonstrated the interdependency among the three dimensions and the empirical research we report here, which builds on (author removed for reviewing purposes), supports this position. For example, a desire to first gain new perspectives on a situation (the cognitive dimension) characterised by turbulence can offer multiple framings of that situation with the help of scenarios, which map the views of those involved. This mutual understanding as well as joint appreciation helps those involved in producing or using the scenarios to reach out to new actors (the structural dimension). And in the process of developing and using the scenarios or building the crane, new relationships are developed to address the turbulence (the relational dimension).

Our research thus shows the value of scenario planning for directly investing in building the cognitive dimension of new social capital (in the scenario building) leading to the structural and relational dimensions of new social capital emerging as by-products. It is precisely in directly investing efforts in the cognitive dimension that our research suggests new social capital can be built far more quickly than the

decades or centuries Putnam (1993) or generations Emery and Trist (1965) suggested building new social capital requires.

How this works is explained within the context of high impact leverage points for intervening in a system (Meadows 1999). Meadows proposed 12 such points with the two most effective (in ascending order) being: 2) the mind-set or paradigm out of which the system arises – its goals, structure, rules, delays, parameters; and 1) the power to transcend paradigms: “Paradigms are the sources of systems” such that the configuration of a system reflects a dominant mind-set which is taken for granted and regarded as “common sense” (Meadows 1999:18). She argued that the most powerful way of bringing about systemic change is to enable actors to acknowledge other plausible paradigms or worldviews so they can together work towards transcending the dominant one/s. She also indicated that “there’s nothing necessarily ...slow” about this process (Meadows 1999:18).

As scenario planning employs multiple worldviews to reframe the actual situation or to transcend dominant paradigms, it intervenes at the places where Meadows (1999) suggested powerful change is most easily possible and potentially quickest. This is how scenario investments can speed up the building of new social capital.

3. The conditions under which Normann’s crane might be built to create social capital

Scholars have argued that social capital is more likely to be built if it concerns ‘meaningful’ issues or activities (e.g., Baker 2000, Cohen & Prusak 2001, Hanifan 2003, Kostova & Roth 2003). Meaningfulness provides an impetus to engage with others in significant ways, not superficially. Scenario planning brings forth three forms of ‘meaningfulness’ for building new social capital: relevance, resonance and responsibility. But - we do note– this is not universal. It depends on a few factors which we summarize below.

The first factor is the extent to which attention is given to the key leverage points that can amplify the impact of the new social capital. Deciding who to involve in building the scenario cranes, when, and how, is critical. Kilduff et al. (2006:1032) viewed organisational networks as complex adaptive systems

where “small investments in social ties can produce large returns to social capital”. Ways of thinking about this include understanding where innovation and power in a system are located, and how key decisions are made. For example, in the Open University, the institution’s core business is the development and delivery of courses to cater for its 250,000 students. Thus, using the scenario process or the scenarios with those involved in developing new course proposals would have been a way to amplify and speed up the new social capital.

Second, the finding that those most directly involved in the work are more likely to build new social capital is a reflection of the type of learning process that scenario planning offers. Vygotsky (1978:86) described how for people the development process lags behind the learning process resulting in what he termed “zones of proximal development”. These zones represent “the distance between the actual developmental level as determined by independent problem solving, and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers”. Scenario planning is a form of ‘collaboration with capable peers’ that -if done well- can offer a significant new learning opportunity for those directly involved. As the participants in scenario planning work through the uncertainty of turbulence, their effort is rewarded with the creation of new systems of meaning and new high quality relationships.

That collaborative learning bridges zones of proximal development explains why those less involved in scenario planning processes sometimes struggle to get the same benefits from them. By not participating directly, they are not offered the same degree of support that the scenario cranes offer to those who build them.

To increase the effectiveness of the scenario cranes for those not directly involved, translation (Czarniawska & Joerges 1996; Latour 2005) rather than diffusion (Rogers 2003) needs to be emphasized. Whereas with diffusion the focus is on communication, with translation, the focus is on engagement or what Bruner (1986:127) referred to as “discovery learning”. With such learning, people climb the ladder of the cranes and appropriate the points of views these offer for themselves (through a social process of sharing and negotiating) and so use the scenarios 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” (Schutz as quoted in Czarniawska and Joerges 1996:28) of end users. In this regard, the EPO compendium worked better than the OU materials in being purposeful for the uses to which many academics could put them, as it ‘translated’ the contents of its work in formats that were easier for them to take up and use.

Third, the best way to build scenario cranes concerns relevance. Signalling that turbulence represents a significant opportunity or crisis that may well disrupt the normal flow of things renders the taken-for-granted problematic, and this encourages learning (Barton & Sutcliffe 2009; Christianson et al. 2008). This may be a good strategy where complacency is endemic and needs to be unsettled. 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 think that the scenario planning will either offer them very little or distract resources from their extant initiatives. Others can feel apprehensive or disengaged if they are not provided with an opportunity to understand the potential or actual crisis.

Alternatively, the scenario planning can be presented as an opportunity to build on the positives within the organisation (Cooperrider & Srivastva 1987; Pascale et al. 2010) or make the core ideology (Collins & Porras 2005) or mandate more robust for future circumstances. This would seem to be a particularly helpful approach where the mission of the organisation is already strong and unifying and can be further positively leveraged. For example, in The Open University, staff members are committed to the mission (providing the opportunity for anybody to access higher education who wants to), which in their minds provided a clear rationale for the existence of the OU and the focus of subsequent strategies. To build on this strength, the scenario planning could have been framed as a process for better understanding the turbulence so the organisation could continue to deliver its mission successfully into the future and thrive in it. In this way, the dominant paradigm or worldview could have been more gently re-perceived (Wack 1985).

A fourth factor is that to overcome the dynamic conservatism (Schön 1971) of existing configurations of social capital, the limits of scenario planning cranes must be acknowledged and

addressed. As the work is often undertaken as a project – the new social capital that it helps build can be nascent requiring further supporting processes to sustain it once the project ends. Without these further supports, the investment in the cranes will not be fully realized and the social capital benefits resulting from the work will be lost – with even the risk of backlash if something is started and not seen to be followed through. Bourdieu (1985:249) argued that social capital is not a natural or social given and must be achieved through “endless effort at institution”. Without such on-going efforts to sustain newly built cognitions and relations, the new social capital will fade away or remain as weak, sporadic, and historical individual contacts. This risk was identified in the EPO where concerns over mandate and workload within the Office threatened the development of ongoing mechanisms for capitalizing on the new social capital built.

CONCLUSION: HOW SCENARIO CRANES MANIFEST NORMANN’S INSIGHTS

The research we report here has shown that scenario planning can be directly deployed to build new social capital if scenario building is understood as Normann’s cranes. This is especially the case for those actors who find the scenario planning relevant and for whom the work resonates, as well as for those who have responsibility for developing and/or using the scenarios.

By using the metaphor of the ‘crane’, scenario planning is able to transfer mindfulness to the vantage point of the higher order conceptual future to help prospective sensemaking (Wright 2005) and reframing (Normann, 2001). With the focus on sensemaking, the cognitive dimension of social capital is foregrounded and can be leveraged, resulting in the relational and structural dimensions being created as by-products. Scenario planning thus represents a direct investment in creating cognitive social capital resources suggesting that new social capital can be built more quickly than Putnam (1993) and Emery and Trist (1965) indicated.

Our findings demonstrate the value of scenario planning for enabling an organisation to build new social capital, and to do so quickly. In doing so, the research, contributes to addressing the ‘dearth of

research' about how organisations can build and re-configure their social capital to cope with changing strategic circumstances (Maurer & Ebers 2006).

However, the research is not without limitations. This is an exploratory study limited to two organisations in the European public sector. While generalizability has been enhanced through linking the findings to theoretical concepts (Eisenhardt 1989), further empirical work in other settings would strengthen it. The research also raises the question about how scenario planning differs from other conversational processes that invoke the future such as search conferences, visioning, Delphi, etc, in building new social capital. Understanding such differences would provide further insight into how to best use the conceptual future and Normann's higher logical order for building new social capital.

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Appendix I. Categorical analysis of the interview data related to how scenario planning builds Normann’s cranes, thereby creating new cognitive social capital

Case	Preliminary concepts	Aggregate themes
EPO	Incorporating the range of perspectives on the future of the patent system and presenting them side by side as equally plausible scenarios	 Scenarios as alternative framing devices.
OU1	Introducing the idea of alternative futures – scenarios reflecting different worldviews	
OU2	Scenarios as alternative futures of the context to strengthen the choice of strategic options	
EPO	The scenario process provided a common language to talk about issues The names of the scenarios (colors) acted as a shorthand for communications with some actors	 Scenario planning providing new/shared language.
OU1	The project introduced a common language to structure discussions This new language extended to ‘scenarios’ and ‘alternative futures’ providing a way to talk about the external environment	
OU2	The names of the scenarios acted as a shorthand within key strategy groups The book titles were regarded as less effective scenario titles than custom built ones (especially for those not directly involved in the creation of the scenarios) The scenarios provided a shared language among actors in key governance groups	
EPO	The compilation of the interviews and the scenarios provided a set of shared stories for actors about the future of the patenting system	 Scenario planning providing shared narratives.
OU1	The scenarios provided a set of shared stories about possible futures for those most closely involved in developing and working with them. The wider academic community on the whole found them too abstract	
OU2	The scenarios provided a set of shared stories about possible futures among the governance groups but by being only posted on the intranet they weren’t widely used by the academics	
EPO	Use of the scenarios in teaching, research, presentations, workshops, etc. provided a mechanism for different groups to discuss the future legitimacy of the global patent system	 Scenarios (and related materials) as boundary objects.
OU1	A ‘black’ book of the scenario planning outcomes was distributed that many academic staff felt was not sufficiently serious. The scenarios were also regarded as too far removed from the work of most academic staff and came with no guidance about how to use them	
OU2	Books were used for the scenarios to increase their academic respectability. However, most academic staff had	

Case	Preliminary concepts	Aggregate themes
	to rely on a brief document on the intranet which limited the role the scenarios played as a boundary object	
EPO	By providing the space to move beyond a binary patent, no patent discussion to presenting the range of perspectives on the future of the patent system (multiple scenarios), people were engaged in more nuanced conversations and considerations than they might otherwise have had	
OU1	For those closely involved with developing and using the scenarios (VCE and project team in particular), the process was 'optimistic' energizing participants by looking at the future and doing things differently. However, for the wider academic community, the scenario planning did not provide such a space	 <p data-bbox="1209 510 1425 685">Scenario planning process providing a transitional space.</p>
OU2	For those closely involved with developing and using the scenarios (key governance groups), the process was 'optimistic', enabling strategic options to be considered and tested with the scenarios ahead of a commitment being needed. However, as the process did not significantly involve the wider academic community, it did not provide such a safe space for them.	