Making Design Explicit in Organisational Change: Detour or Latour

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This paper explores a Latourian approach in addressing the challenge for Design Management to integrate design strategically within small, medium enterprises (SMEs). Design thinking's positioning towards providing an accessible and open process for organisational change is argued to currently manifest a rhetorical detour around the role of design practice. The proposal is that the role of design can be expressed in the repeated interactions between participants and design artefacts, and how these are then translated into the organisation.

The paper uses a case-study method to produce a situated account of design work within a strategic design intervention with an SME. Drawing on Latourian principles around actor-network theory (ANT), observations and accounts of the intervention are grounded in the use of tools, artefacts and activities deployed. This allows for analysis exploring the traceable influences design artefacts have on the work being performed and a reflective space for designers to assess their performative agency.

The paper proposes an approach to the constraints and opportunities that design management encounter around the matters of concern for organisational change; and in so doing, how this can inform reflective design practice.

Keywords: *actor-network theory; design artefacts; performativity; participatory design; cultures of innovation.*

Introduction

Design is performative, a divergent process of repeatedly engaging people and things in order to devise and engender new things. When these things are tangible, such as artefacts, it's relatively simple to show how design has contributed. When these things are intangible, such as change in an organisation's behaviours and culture, design's contribution is much less clear. This paper explores how a shift in perspective towards design contribution could be made more explicit in future interventions for organisational change.

The paper lays out the background context of change management and cultures of innovation where design thinking has rhetorically sought to demonstrate value. This is argued to be a misrepresentative detour in articulating design's contribution for change and instead identifies the gap in literature between Service Science and Co-Design. The paper then presents a position around actor-network theory (ANT) in relation to design and the organisation and proposes a perspective towards articulating the performative agency of design artefacts. The paper then presents a case study representing a situated account of an on-going exploratory design intervention with an SME and draws on key analysis from the case study to argue how an ANT approach can help make design more explicit within the matters of concern for organisational change.

Design in the Discourse of Change

Design is being performed on an ever-increasing spectrum of levels with complex practices arising in response to developing markets and technologies, co-design, digital interaction, service design and cultures of innovation; design itself is under constant disruption. This expansion is no longer restricted to artefacts but encompasses how designers participate in the distribution of production (Atkinson, 2006), mediate social change (Papanek, 1983; Saul, 2011) and innovate organisational processes (Brown, 2009; Martin, 2008; Neumeier, 2008). As a result there is demand on the management and articulation of design's application across disciplinary boundaries, which has led to many layers of abstraction in the communication and practice of design. As design becomes increasingly multi-disciplinary, the scrutiny of design from management theory has dominated the subject of delivering innovative change for organisations.

Hayes (2002) summarises two types of change predominant in management theory: firstly, incremental change, associated with periods of external equilibrium where the focus is on continuous improvement; and secondly, discontinuous change, occurring in periods of disequilibrium and involves a break from the past based on new relationships (Hayes, 2002:7-8). This echoes Norman and Verganti's (2012) distinction of design's capacity to innovate in their paper, 'Incremental and Radical Innovation: Design Research Versus Technology and Meaning Change'. Verganti emphasises design research having more potential to influence radical innovation by focusing research methodologies towards meaning-driven rather than technology-driven innovation, as he claims currently happens through human-centred design (Norman and Verganti, 2012:16). Norman and Verganti's reflection on design's impact for change points towards a dynamic role for designers free of incrementally gaining knowledge. Here is an initial example of the rhetorical detour positioning design; permitting intuitive and speculative indicators for what is incremental or what is radical. Pre-determining these indicators of innovation during a design intervention is potentially misrepresentative of the change design can perform.

A telling commonality that Hayes notes in the methods and concepts for change management is the approach of developing models to simplify the complex phenomenon of organisational behaviour at different levels. These focus on key elements that are seen to offer a good representation of the real world, the ways these elements interact with each other and the outputs produced by these interactions (Hayes, 2002:71). These models try to summarise an understanding of the cultural factors within an organisation in order to maximise the ability to bring about preferred futures. As highlighted by New and Kimbell (2013), much of managing consultancy is positioned as trading in specific knowledge; 'they understand the problem better than you (they do a diagnosis) and they understand the prescription better than you (they provide the solution)' (New and Kimbell, 2013:3). This reductive modelling of a chosen context is left very much to the key actors and their acceptance of the model involved, leaving the process open to misrepresentation of individual relationships and interactions.

An important distinction that emerged within change management was between the role of managers and the role of leaders in affecting change. Kotter's (1999) influential text, 'What Leaders Really Do', argues that both managers and leaders have to attend to three functions: 'deciding what

needs to be done', 'developing the capacity to do it', and 'ensuring that it is done'. Kotter distinguishes a marked difference in the way that managers and leaders attend to these functions: managers focus on a process of goal setting, whereas leaders focus on setting a direction; managers develop capacity by organising and staffing, leaders focus on aligning and empowering people to make the vision happen; managers ensure accomplishment by controlling and problem-solving, leaders are concerned with motivation (Kotter, 1999). Kotter believes leaders can overcome the inevitable barriers to change that they will encounter as the initiative unfolds by articulating the vision, involving people in decisions, supporting others' efforts, and recognition and reward (Kotter, 1999). These can be argued to have influenced design thinking's approach to organisational change up to now, how to influence people to think differently and inspire creativity, with an emphasis on human-centred innovation (Brown, 2009:18). Despite the significant role of tools and prototyping, the relationship between designers and these artefacts is still greatly underrepresented in such approaches.

Design Management has positioned itself firmly within the field of change for organisations by linking design, innovation, technology, management and customers to provide competitive advantage through effectively designed products, services, communications, environments and brands. A major influence in this positioning has been the rise in design thinking, which professes to take shape as an attitude, as a methodology and as a philosophy that can bring customers and clients into the design process (Beacham and Shambaugh, 2011). The success of design thinking is interpreted by Press (2012) as 'a strategy for companies such as IDEO to be taken more seriously by the business community and by government.' There is a conscious attempt in the literature to 'distance itself from the analytical and quantitative, to the intuitive and qualitative,' while still being 'framed in business-speak' (Press, 2012). The designer is more an expert in a process rather than in a specific problem (New and Kimbell, 2013). Its increasing adoption suggests the message is getting through to both business and government helping to diversify and strengthen the markets of the design industry.

Brown's (2009), *Change by Design*, positions design thinking as a vehicle for change, writing that it 'uses the designer's sensibility and methods to match people's needs with what is technologically feasible and what a viable business strategy can convert into customer value and market opportunity' (Brown, 2009:18). This aims to position designers as empathic leaders within

strategic decision-making and to 'bring design into the boardroom' (Brown, 2009:37), allowing greater influence to use design methods to implement change. Martin (2009) presents design thinking as a term being used today to define a way of thinking that produces transformative innovation. Martin attributes its popularity in making it easier for those outside the design industry to focus the idea of design as a way of thinking about solving problems; a way of creating strategy by experiencing it rather than keeping it an intellectual exercise, and a way of creating and capturing value (Martin, 2009). According to Martin, 'the design thinking organisation applies the designer's most crucial tool to the problems of business. That tool is abductive reasoning' (Martin, 2009). This is not specifically expressed in terms of looking to designers to meet these problems, but their methods and processes proliferated throughout an organisation, expressed as building a culture of innovation (Brown, 2009; Neumeier, 2009; Martin, 2009; Kelley, 2005 and others). A problem arises therefore in that the designer no longer embodies value, but the tools and approach an organisation is told it can acquire, as though the designer and the methods were distinct from each other. The authors' critique of design thinking is that it represents a rhetorical repackaging of design methods for the purposes of management culture, rather than a genuine innovation of organisational culture based upon values in design practice developed in and through the innovation of research.

Sanders (2006) highlights the mutual influences of the American-led Human-Centred Design, from which design thinking emerged, and the European-led Participatory Design that have begun to shape contemporary notions of co-design. The debate in the changing role of designers and their methods in a co-design process (Brandt, Binder and Sanders, 2012; Atkinson, 2006) pivot around design as a leader of innovation (Verganti, 2011) or design as the democratisation of innovation (von Hippel, 2006). With Participatory Design in particular, this has been influenced by methods of integrating new technologies and systems development within organisations, showing greater emphasis on designers and the tools and techniques they use. Bjögvinsson, Ehn and Hillgren (2012) recognise parallels in the appealing rhetoric of design thinking and many of the concepts explored in Participatory Design, but distinguish their approach to social innovation through engagement with the socio-material, as opposed to fluid notions of design intuition (Bjögvinsson et al., 2012:103).

Sanders and Stappers (2008) summarise the mixing of roles in co-design providing an indication of the blurring disciplinary boundaries in the design

process:

> *'… the person who will eventually be served through the design process is given the position of 'expert of his/her experience', and plays a large role in knowledge development, idea generation and concept development. In generating insights, the researcher supports the 'expert of his/her experience' by providing tools for ideation and expression. The designer and the researcher collaborate on the tools for ideation because design skills are very important in the development of the tools.* (Sanders and Stappers, 2008:6).

Sanders and Stappers recognise the designer as able to occupy the researcher role in a co-design process, but also identify the rising challenge for design's relevance as a profession by emphasising the wider skills future designers will need to adopt, such as conducting creative processes relevant at larger levels of complexity; using generative design thinking to address change in the future; maintaining expert knowledge on emerging technologies, production processes and business contexts; while maintaining recognised specialisations in product, interaction and communication design (Sanders and Stappers, 2008:15). There is a sense of a gamble for designers in the increasingly complex combinations of skills they will be expected to employ that are less and less rooted in design. This is an additional detour designers risk continuing to follow without some way of being able to make their design contribution explicit across the disciplinary boundaries they encounter.

An alternative approach is presented by the discipline of Service Science, which first emerged in 2004 from the efforts of researchers at IBM and associated academics, based on a call for more research in areas related to services (Chesbrough, 2004). There has been an increased service orientation in today's business practices that departs from the traditional manufacturing paradigm (Oliva & Kallenberg, 2003). Services are defined as 'the application of competences (knowledge and skills) for the benefit of another entity' (Spohrer & Maglio, 2009). A service economy is hence bringing new managerial issues, which are linked to an intensification of not only knowledge, but also information technologies, innovation and the demand for highly qualified people (Hipp & Grupp, 2005).

Equally central to the development of service science is the complexity of business environments, which can be addressed through a focus on service innovation in a cross-disciplinary context. The service science

premise is that no single discipline or philosophy can successfully be used to face complex systems, and a cross-discipline approach to decision making is required (Paton and McLaughlin, 2008b). In order to reach success in such adverse and complex contexts, service science uses service innovation, which is now gaining recognition in academic and commercial research circles, as a key driver of sustainable socio-economic growth (Paton and McLaughlin, 2008a). Service innovation is based on the identification, support, development and delivery of meaningful service exchanges to achieve sustainable growth. A notable point of interest in the application of service science research through service innovation is the possibility to offer 'a means of securing knowledge leadership', which can be achieved through value-added knowledge exchanges, regardless of industry boundaries (Paton & McLaughlin, 2008a).

This paper sits within this gap of how we can infuse design principles from design thinking and participatory design with service science to stimulate and sustain value during cultural organisational change. The contribution proposed is that, following the emergent value discourse of service innovation, an actor-network theory (ANT) approach, already influential in Participatory Design, can better evidence the meaningful exchanges of design grounded in the matters of concern that can inform reflective design practice.

Representing Matters of Concern
ANT is a sociological body of theory that 'attempts to overcome the old sociological dilemma of structure and agency by positing that structure and agency arise together' (Mewburn, 2010:365). It is derived from Science and Technology Studies (STS) research exploring object-oriented ontologies (Morton, 2011), which seeks to understand the complex connections and networks that emerge between objects, or as Latour termed them, non-human actants (Latour, 2005b). ANT emerged from STS as an approach to observing and describing the associations between human and non-human actants that produce the effects of agency we observe around us (Latour, 2005b). All effects of agency are phenomena often assumed as facts – such as a newspaper, an industrial sector, or perhaps the discipline of design management itself – and all can be thought of as actor-networks arising from the work of people and things that become visible or perceptual when performed. The focus of attention in ANT then is on the 'work of people and things which perform' the reality of an organisation 'into being' (Mewburn, 2010:365). As emphasised by Latour (2005a), it is the work, the movement,

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the flow, and the changes that should be stressed collectively as performative.

Butler (1990) associates the performative with a normalising power. The repetitive nature of work and language engenders actors in processes, structures, roles and artefacts that are perceived to stabilise the network. Performativity is recognised as having an increased influence within Management Studies through following the actions within an organisation and how these connect into stabilised patterns (Diedrich, Eriksson-Zetterquist, Ewertsson, Hagberg, Hallin, Lavén, Lindberg, Raviola, Rindzeviciute and Walter, 2013:16). Performativity, therefore, represents a particular articulation of the phenomena producing the effects of agency, 'pointing to the very world-making […] effects of hybrid, heterogeneous, multi-agent practices such as designing' (Holert, 2011:28).

Key to this articulation for design are design artefacts, which draw on the position of Binder, De Michelis, Ehn, Jacucci, Linde, and Wagner (2011) 'what designers deliver is not an object, but just its embodiment – what they deliver is a thing,' (Binder et al., 2011:77). The design thing is explored through various representations to engage with the design problem, what they refer to as 'constituents of the object of design' (Binder et al., 2011:59). These constituents are not the object they [designers] are designing, but each of them allows them to interact with the object and to discuss its different features (Binder et al., 2011:59). In this scenario, the various tools, sketches, drawings, maps, diagrams, blueprints, storyboards, models and prototypes, are constitutive of the 'object of design', referred to in this paper as design artefacts.

Latour argued that through our will to modernise technologically, scientifically and economically, 'we rendered more and more explicit the fragility of the life support systems that make our 'spheres of existence' possible' (Latour, 2007); what Sloterdijk (2004) called, *explicitation*. In other words, what earlier was taken for granted has now become explicit matters of concern; an expression used by Latour to distinguish from matters of fact:

> *While highly uncertain and loudly disputed, these real, objective, atypical and, above all,* interesting *agencies are taken not exactly as object but rather as* gatherings*. (Latour, 2005b:114)*

It is from this concept of *explicitation* that the following case study attempts to articulate the matters of concern and any role design artefacts play in 'gathering' and representing them. The suggestion is that any notions

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of strategic value generated through design should be assessed in line with notions of the matters of concern that emerge.

Case Study

ANT uses qualitative methods including observation of the work being performed and interviews with the actors within the network (Mewburn, 2010) to tell 'stories of how things, objects, actors, come to be how they are… through a process of interaction with other actors;' how interaction 'changes actors' and 'translates actors' (Kraal, 2007:6). These stories, in ANT, are traditionally textual accounts with the main tenet being 'that actors themselves make everything, including their own frames, their own theories, their own contexts, their own metaphysics, even their own ontologies' (Latour, 2005a:150). This dedicated objective approach to describing the network, including allowing participants to inform what work they do in their own words, is not to say that they are describing the network for you, but in the process of interview and observation they help to describe what work they are doing, for what reasons, in response to, or association with, what things.

The descriptive textual account produced through ANT is 'not a nice story' but 'the functional equivalent of a laboratory […] a place for trials, experiments, and simulations' (Latour 2005a:149). The analogy of the laboratory is suitable for cases of disciplined social sciences towards hypothesis and theory, but for design research there is a need to demonstrate the value of such an approach in practice. The suggestion is that the analogy of the laboratory could be appropriated towards the design studio through an act of *translation* by the designer in practice. By using embedded observations and accounts of the participants experience in the intervention, a descriptive ANT account emerges grounded in the tools and activities deployed. This allows for analysis exploring the traceable influences of work being performed and a reflective and reflexive space for designers to assess and value the affect they have. This paper presents a summary of the key observations alongside selected images representing key activities and artefacts in order to articulate the matters of concern that arose and how this affected the work during the intervention.

New Ways of Working with Design

The case study presented in this paper is from a design research project working with an SME textile manufacturer based in Peebles, Scotland, who produce high quality woollen fabrics for apparel and transport markets. The company agreed to undergo a design intervention to develop a more creative and innovative organisational culture. The design intervention took place over nine one-day sessions, one session delivered per month between October 2013 and July 2014 with a final tenth session scheduled for January 2015 to capture the progress made. The intervention involved a cross-diagonal slice of twelve of the company's personnel from management to the factory floor, who are referred to as the slice in this paper, to help embed the methods and approaches conducted throughout the company. The sessions were delivered by two design practitioners with the lead author as an embedded researcher. The embedded researcher observed the sessions through: note taking, photography and conversations with all participants. The sessions also included a change management consultant and academic who supported the delivery and reflections throughout the intervention. Before and after each session the delivery team would meet to discuss the design of the plan of activities, what was achieved, what wasn't achieved and what occurred outside the plan. A summary of selected methods and key artefacts are presented in the following account. The intention is to provide a notional indication of their interrelations and performativity through an actor-network theory approach.
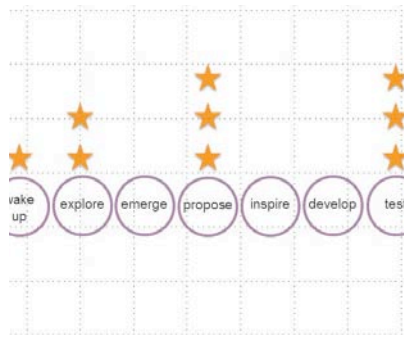
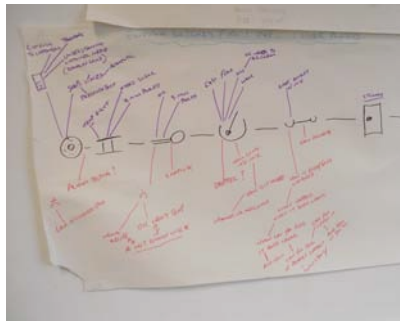*Fig. 1 'Detail from the Underlay'*

Fig. 2 'Product Journey from Bakery'

Fig. 3 'Initial Yarn Journey Iteration'

Priority areas of workforce development through a topic of 'yarn stock' were agreed with the company's management team. This informed a structure for the intervention referred to as the 'underlay' (*fig. 1*): a live, digital document serving as a reference when designing each session and the methods to address each area for improvement. Each method was referred to as a 'beanpole' meaning the designers would not implement them, but introduce them and allow the company to appropriate them as they saw fit.

From the underlay, a key method chosen was based upon a 'user journey', which was translated into a product journey that yarn undertakes in the factory. The slice would first practise dry runs visualising the journey of beef and bread after visiting a local butcher/baker (*fig.2*).

The slice selected a best-selling, problem fabric with the intention of capturing the issues that occur along the entire yarn journey. The slice split themselves into pairs for gathering details of the yarn journey throughout the factory, including departments and processes that were unfamiliar. Initial pathways were text-based flow diagrams on flip chart paper (*fig.3*) upon which post-its were placed highlighting gaps and questions to be asked.

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Fig. 4 'Developed Yarn Journey'

Fig. 5 'Identifying Delays'

Fig. 6 'Mind-mapping Quick Wins'

During a second iteration of the yarn journey, different ways of visualising the information emerged. A linear, box-based, process diagram with drawings or photographs of each stage and colour-coded annotations above and below were chosen and constructed. This was led by key members and put up on one of the factory walls, though all members were able to input information (*fig. 4*).

The session immediately following the construction of the yarn journey was rich with identifying the delays that typically occur along the production process and the frequency at which they happen (*fig. 5*). Employees from the factory floor also added their own contributions to the detail in the yarn journey with post-its. A video was also requested to explain the journey to board members.

The process then focused on identifying how the group could achieve 'quick wins' among the problems and delays identified. The designers introduced six hats, mind mapping (*fig. 6*) and methods of scoring issues across multiple criteria. The design team spent a long time with the slice with these techniques and how to action the quick wins, prompting an entire session to practice them and create guidelines on how to perform them.
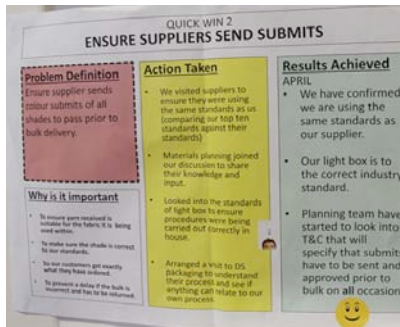
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Fig. 7 'Journey with Quick Wins'

Fig. 8 'Reformatted Quick Wins'

Fig. 9 'Populating the Honeycomb'

Three quick wins were selected with attempts across the group to action them. The mind maps and action points for each one were encouraged to be displayed alongside the yarn journey (*fig. 7*). This produced a messy display of large flip chart sheets positioned below and above the central journey, which was deemed to be unclear for the rest of the factory.

To address this lack of clarity, the slice developed a new format of A4 single sheets for each quick win with coloured panels containing: the problem identified, why it was important, the action taken and the results achieved (*fig.8*). This was seen as an improvement by the designers, but still not an exciting way of communicating the achievements of the slice with each quick win.

In the very first session, the design team had introduced an A0 printed 'honeycomb' diagram, based on the Design Council's double diamond, as a scaffold of the process the slice would learn to undertake and related to the aims of the underlay. The honeycomb was used in session 6 to reflect on the progress the slice had made. The group annotated and positioned polaroids of earlier activities onto the honeycomb to understand their relation to each other in the process and present this to others in the factory (*fig. 9*).
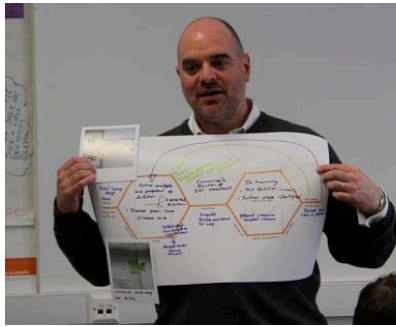
Fig. 10 'Quick Wins on the Honeycomb'

Fig. 11 'Quick Win Fabric Board'

Fig. 12 'Dream Vision'

The honeycomb template was then provided on A3 sheets to reflect on the process for each of the quick wins (*fig. 10*). Slice members would use the language from the honeycomb to describe the activities they undertook. Wider members of the factory asked for this to be disseminated as a reference to engage with the slice.

There was a perceived lack of celebration of the fabric in the factory and within the slice. The design team requested a further iteration of communicating quick wins, challenging the slice to use fabric from the factory on pin boards. The slice split into three groups, each following different approaches. The most appreciated used the original problem fabric of the yarn journey, re-visualised two quick wins as diamonds and mounted it on the entrance to the yarn store (*fig. 11*).

A late method introduced by the design team was the dream vision (*fig. 12*), which responded to requests from the slice on how to recruit members across the factory into the process. A visual structure was devised by which to capture what workers thought was possible and the assets needed to get there. The slice immediately adopted it with management to reiterate their own vision and members began to find hooks to which they could assign methods they had learnt.

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Insights and Opportunities

The summarised observations above represent only a selection of the techniques used around the development of quick wins. A key challenge during the intervention was relating the tools and techniques to each other and understanding how they can flow to achieve the goal of developing the workforce around issues of yarn stock. The process of constructing plans of action developed slowly through trial and error, pointing towards a need for deeper articulation of how they perform together. The honeycomb and dream vision emerged as key artefacts in representing that need and are perceived as central means of embedding some of the activities across the wider factory.

Each activity was introduced at a democratic level where each participant had an equal stake in the process, but once details and processes of decision-making arose, a core group of management staff often took control of discussions. Part of this behaviour was recognised in the variation in language across the group. When managers were referencing their current projects as already addressing issues identified, they referred to intangible processes of assessment or performance improvement that abstracted the matters of concern. When the weavers, darners or yarn store workers demonstrated their knowledge, reference to disruption in their equipment, tasks or techniques would inspire questions across the group to understand the process more. This was facilitated in part through constructing the yarn journey and discussion centred on understanding specific delays or issues. Seeing a problem in relation to the entire process, as well as the workers day-to-day routine, has helped articulate it as a more immediate matter for concern. The problem is immediately expressed in relation to potential causes, or at least signposts where to investigate the causes.

Building confidence in adopting and adapting a flow between the methods and wider process introduced during the intervention has been slow to take hold. There have been multiple occasions when the preparation work asked from the slice between sessions had not been fully or accurately done, indicating that the required leadership from participants was not happening. Few participants would lead in taking the activities to the wider factory. From a service innovation perspective this would look to build in additional responsibilities and requirements for workers, through the relevant design artefacts, to help facilitate each interaction. In an exploratory intervention such as this, however, such organising principles

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needed to emerge as an outcome at the end of the process. With the delivery team there for no more than a couple of days a month, this depends on members of the slice understanding and repeating parts of the process to gain confidence.

Capturing knowledge on how best to perform activities was encouraged for the slice, with guidelines and criteria being produced on activities such as mind mapping and discussions following reflections on early attempts. The intention was for them to be a reference each time, but they often got forgotten among multiple sheets of flip chart paper and post-its. The performative qualities of such information struggled to translate effectively outside the sessions, raising the question of whether the visualisation, the scripting, the staging, the roles around such activities could be more explicitly represented.

In the design team meetings between sessions, the underlay was seen as an important reference tool by the lead designer for discussing and designing each session. A printed A4 page summary of each session plan was brought as reference, but more often than not a new plan would evolve on the day in response to how the slice progressed with preparation work left from the previous session. When the quality of the work performed by the slice on individual activities would become the focus it disrupted an experience of the flow of how the techniques relate to each other. Discussions around the underlay were limited in representing the actor-networks of participants in adopting techniques, but the opportunity would be to make a structure such as the underlay more explicit within such actor-networks and account for these emergent indicators.

Early Impressions
The ANT account of the work performed in the intervention brings the design artefacts into sharper focus in relation to the wider goals and behaviours of the design team and the participants. The dynamism of certain artefacts, such as the visualisations of the yarn journey or the dream vision, emerge as initial evidence of performative agency. The yarn journey helped reveal key matters of concern such as the impact of delays across departments. The visual nature was easily understood by people from the factory floor to the boardroom and potentially even suppliers, gathering interest and insights that built up a demand and potential to integrate it into the wider factory process. The dream vision emerged late on, after reflection on the intervention, to become a crucial representation of the context of the process. The managing director even began referring to the

honeycomb and dream vision as potentially shaping their business model, assessing current management projects with the stages it represents, identifying the value such artefacts could provide.

In contrast, but just as compelling, there was initial discomfort in trying to mind map the complexity around the quick wins identified on the yarn journey. Emergent matters of concern included externalising blame, departmental language and low communication skills within the quick wins activities. More often than not the slice fell into old habits of talking around problems with some of the management or department-specific language infiltrating discussions. The identity of the slice, Culture Club, also showed limited impact on the rest of the factory, rather than an embraced part of the intervention. When design artefacts are not made explicit in relation to the matters of concern as they arise they can become lost, forgotten or ill understood. Their performative agency is bound by the meaning gathered in their repeatable nature in context and translation into the wider organisation.

The challenge an ANT approach represents to the designers is not only how to embed design artefacts and methods within the existing flow of work so that it gathers interest in the arising matters of concern, but that the quality of that representation translates across those actors that are gathered to inform calls to action.

Research Limitations

As an embedded researcher within the intervention, the lead author has only been able to observe the participants during each monthly one day session. The work between sessions has not been able to be followed according to the immersive demands of actor-network theory. As a result, only a second-hand insight into the uptake and engagement with tools and design artefacts was possible for these long periods in between. While presentations of this work, and reflections on their value in sessions, have provided some data in this regard, much of the influence on the factory is largely anecdotal and subject to interpretation in the account obtained.

The tone of the intervention has been exploratory, with a mix of design methods and management methods provided alongside each other. This means any interpretation by the lead author into the performativity of certain artefacts has to be quite specifically situated and associated to the activities using management methods. The identification of design artefacts is therefore a fluid process after the event as identified by participants and the delivery team.

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There was no prior audit of the existing culture at the company done by the authors, so any attempt to infer the influence of the intervention on the wider company can only be contrasted by the emergent impressions of the existing culture during the intervention and impressions of change offered by participants themselves. Any full assessment of design successfully eliciting meaningful change within the organisation can only be gleaned after the intervention is complete with a visit planned for January 2015, six months after the final session.

Future Research

The research for this case study is part of a wider thesis continuing to collect data up until the final session is complete and will conclude with interviews with selected participants from the slice, wider members of the organisation, as well as the delivery team. A more thorough analysis of the performative agency captured in the ANT account uses methods from grounded theory to evidence and identify design's capacity to implement new ways of working within an organisation.

While the role of an embedded researcher in the sessions themselves has produced rich data for the purposes of ANT, the lack of data acquired in between the sessions represents a significant gap in telling the wider story of the intervention. Future research on similar interventions would look to obtain continuous data from the organisation during and in between sessions in order to more accurately represent the flow and nature of the work being performed by the participants and, more importantly, the work performed with the methods within the actor-network of the organisation.

Finally, the aim of this research was to capture some indicators of innovation to help make design explicit for the purposes of reflective design practice and thus reduce the rhetorical detour engaged by many designers. As a result, future research would look to bring ANT explicitly into a strategic design intervention for SMEs as action research, in order to test how some of the insights can be folded into the production and delivery of design strategy.

Conclusion

This paper set out to explore a Latourian approach in addressing the challenge for design management to express design strategy within SMEs. The paper presented a gap in literature within change management and cultures of innovation where design has sought to demonstrate value, aligning to the direction and gap in literature of Participatory Design and

Service Science. The paper then presented a position around actor-network theory (ANT) in relation to design and the organisation, the effects of agency through the network of associations between people and things, and argued it provided a method articulating the performative agency of design. An on-going case study was then presented representing a situated account of design work within a strategic design intervention with an SME, summarising the interrelations and trials of strength across key methods. Finally, the paper provided key insights and outcomes from the case study to argue how an ANT approach can make design more explicit and how this could inform the delivery of design interventions for organisational change. This has been presented in response to the call seeking contributions on understanding collaboration, coordination and cross-functional integration processes as essential for effective innovation performance.

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