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SENSE AND SYMBOLIC OBJECTS: STRATEGIC SENSEMAKING THROUGH DESIGN

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This paper reports on an ongoing investigation into one aspect of the design thinking phenomenon, namely the use of designed artifacts — sketches, renderings, graphics, models and prototypes — as symbolic objects in strategy making and implementation. It examines the conceptual overlap between design and the strategic cognition perspective, which considers cognitive processes and structures involved in strategic decision making, particularly the phenomenon of sensemaking. It is primarily a theoretical exploration, but draws on two short testimonies from designers. The specific conceptual connection between design practice and strategic cognition theory is potentially valuable to business leaders and managers involved with innovation, design management and strategic decisions.

Preliminary findings suggest sensemaking activities by designers generate innovative future concepts with far-reaching strategic implications; designed artifacts aid sensemaking and sensegiving by management in exploring new business opportunities and directions.

This paper is an early draft of a fuller account to be published in 2013 (AIEDAM Special Issue, Spring 2013, Vol.27, No.2, Studying and Supporting Design Communication, Edited by: Maaike Kleinsmann & Anja Maier).

Keywords: strategy, sensemaking, symbolic objects

BACKGROUND

Recognition of value added through design is long-standing and quite comprehensive, having first focused on design in the product context, then growing to encompass marketing and branding, and ultimately including the organization and society (Cooper, Junginger, & Lockwood, 2009). Cooper & Press (1994) suggest that designers contribute in three key operational areas, the design of corporate identity, saleable products, and of operating environments (see also e.g. (Hayes, 1990; Olson, Cooper, & Slater, 1998; Phillips, 2004).

The subject of this paper lies in the third, organizational context, as it refers to the use of design approaches to aid strategic decision making and implementation. Proponents of design thinking argue that methods and tools of designers can help understand and tackle complex challenges, where analytical approaches alone are inadequate, including strategy (see e.g. (Liedtka, 2004; Brown, 2008; Cooper et al., 2009; Lockwood, 2009; Martin, 2009)). One defining characteristic of these design approaches is the representation of concepts

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through designed visual or physical artifacts. Key texts in design thinking literature such as those above stress the importance of visualization for common understanding and decision–making among stakeholders, including non–designers. So what is so special about visualzation? Is it axiomatic that 'seeing is believing', that a rendering, storyboard or model brings an idea to life? Perhaps, and in simple situations this is enough of an explanation, but this catch-all term of visualization spans several layers of complexity. At its simplest we might think of the way a chart or infographic renders complex data comprehensible. This is very different from the creation of artifacts that articulate and express meaning and emotion, not merely information. In product terms, a convincing prototype through being experienced conveys knowledge and meaning in ways unsayable in words or numbers†. In organizational terms, designers may create a representation of something more abstract than a product or service (such as the changing identity of a firm), in order to build a shared understanding or a vision of a future possibility. Such practices are reported from industry (Stevens & Moultrie, 2011), but how does such a fuzzy, speculative activity sit in the world of corporate management and strategy, where process efficiency and reliability are supposedly the rules of the game? Do the claims of the design literature square with current ideas in strategy? This is the crux of this paper but before I come to it, a brief diversion is necessary for a short summary of a large topic.

STRATEGY–AS–PRACTICE, SENSEMAKING AND SENSEGIVING

Since Mintzberg (1994:321) debunked the notion that strategy can be planned, 'strategy–as–science' dominant through the twentieth century is being challenged by an approach which pays closer scrutiny to how strategy work is actually done by people (Whittington, 1996), and accounts for "organizationally situated managers, widespread uncertainty, and poorly defined problems with unknowable social and economic consequences" (Powell, Lovallo, & Fox, 2011). The strategy–as–practice‡ school explores how strategy emerges from the interactions between actors and their contexts (see e.g. Johnson, Melin, & Whittington, 2003; Jarzabkowski, 2003). Within this school, behavioral strategy applies cognitive and social psychology, grounded in "realistic assumptions about human cognition, emotion, and social interaction" (Powell et al., 2011). Strategic cognition considers the cognitive structures and processes involved in diagnosis, decision making and implementation (Narayanan, Zane, & Kemmerer, 2011), which include sensemaking and sensegiving (Daft & Weick, 1984; Weick, 1995; Narayanan et al., 2011).

There are varied definitions of sensemaking (Weick, 1995), though broadly it is taken to mean the process of giving meaning to experience, by mentally placing elements of that experience (such as observations or data) in a framework or cognitive map. This enables one to "comprehend, understand, explain, attribute, extrapolate, and predict" (Starbuck & Milliken, 1988), to understand connections among, e.g. people, places, and events (Klein, Moon, & Hoffman, 2006), or to explain surprises or discrepancies. Sensemaking is triggered by disruption, a deviation from the expected (Weick, 1995:5), which might be noticed through a deliberate or formalised activity of information gathering or scanning (Daft & Weick, 1984). In the strategy context this means being attuned to changes in external and internal environments that might affect future performance. (Gioia & Chittipeddi, 1991) argue that through sensemaking, stakeholders grasp a firm's internal and external environment and redefine the way they conceive the organization — a crucial process for

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† This of course is one of the main reasons for prototyping; creating renditions of a product permits the testing and development of an idea with a view to taking it to market. In the new product development (NPD) process, prototyping is crucial and well documented, and parallels are seen more recently in service design (Kimbell, 2009).

‡ It is interesting to note the similarity here with the shift from design-as-science to design-as-discipline that happened decades earlier, as outlined by Cross (2001).

strategic change. Notably, it is not only senior executives but multiple stakeholders who shape this change.

The outcomes of sensemaking – such as judgemental decisions to enact change – may then be articulated and given meaning to facilitate interpretation by other stakeholders; this is termed sensegiving (Gioia & Chittipeddi, 1991; Dutton & Ashford, 1993; Gioia, Thomas, Clark, & Chittipeddi, 1994). Through sensegiving, strategic intent is framed and disseminated to ensure all constituents understand and accept the changes, and this collective buy-in is essential for the changes to happen (Fiss & Zajac, 2006). Instrumental in this are the "symbolic constructions used to create meaning for others (i.e. to give sense)" (Gioia & Chittipeddi, 1991), including a "captivating vision…[which] provides a symbolic foundation for stakeholders to develop an alternative interpretive scheme". Through sensemaking and sensegiving, middle–level managers and other constituents can influence strategy making (Dutton & Jackson, 1994; Dutton, Ashford, O'Neill, & Lawrence, 2001). I suggest that these other constituents might include designers, whose skills and methods are well suited to helping build and convey these symbolic constructions and captivating visions as artifacts.

WHY DESIGN?

So what makes design (and designers) so able to contribute to these sensemaking and sensegiving processes? Are designed artifacts capable of such symbolism? Designers and design researchers describe design as "a way of organizing complexity or finding clarity in chaos" (Kolko, 2010). It is recognised that visual and physical artifacts are valuable for conveying tacit meaning (Polanyi, 1967), and as boundary objects (Star & Griesemer, 1989; Carlile, 2002) which can aid knowledge transformation across boundaries of understanding, where actors negotiate their differing interests and cognitive frameworks (Carlile, 2004). Eckert & Boujut (2003) characterise boundary objects in design as including any physical and virtual artifacts (sketches, technical drawings, models and prototypes) "that can convey meaning in interpersonal communication, but have an existence beyond a single act of communication." They serve as reference points but may be understood differently by the different participants: "many design processes depend on the different participants interpreting boundary objects not in the same way but in compatible ways" (Eckert & Boujut, 2003).

I suggest that the designed output is a symbolic embodiment of the designer's or design team's sensemaking, both in a personal sense, and on behalf of their employer or client. This symbolic embodiment may be then be key in sensegiving, influencing sensemaking by others engaged in strategy.

What all this points to is the existence of a type of designed artifact which is not directly part of the NPD pathway, which may not see light of day outside the firm, which is not widely discussed explicitly in literature or industry, and yet has high value and impact on the firm's operations and strategy. Such artifacts, visual or physical, are created as part of strategic sensemaking and sensegiving within the business or in the stakeholder network.

EXAMPLES

To illustrate this idea, I include short excerpts from interviews with two designers carried out as part of a series of case studies§. Both respondents recount designing artifacts that were

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§   Interviews in 17 UK firms were carried out from 2007 to 2010 with designers, product managers and others in senior design–related roles exploring the various strategic impacts of design. Deep case studies were made of two of these firms. For further methodological details and findings see (Stevens & Moultrie, 2011). Seeking to clarify these internal roles in terms of cognitive strategy, interview transcripts were revisited for a second analysis according to themes derived from the key texts (especially Daft & Weick, 1984; Weick, 1995; Dutton & Ashford, 1993; Narayanan et al., 2011), that is, related to sensemaking and sensegiving, to strategic decision making, long–range planning, and key words like change, complexity, future, symbols, visualisation, vision, and communication.

not intended for the market but were for internal use, and had a strategic influence. They are suggested as possible examples of design contributions being made in sensemaking and sensegiving activities at various levels. I make no claims of randomized or representative sampling, or of proving any hypothesis, but present them as illustrations of why the idea is worth further investigation.

ANDY

Andy works for a large European firm that designs and manufactures mobile phones and devices, employing several hundred industrial (product) designers and interaction designers in London. He is head of the firm's mid–range design strategy team, and has about 20 years' industry experience. Andy describes how product prototype models are increasingly used to represent the firm's future portfolio; in the past decisions were made by the Business Planning department, mostly on the basis of technical and functional specifications. The subtleties and nuances of the various products cannot be captured or communicated in a spreadsheet of specifications adequately enough to convey the direction in which they would take the firm.

> *On a spreadsheet it looks very similar but actually the designs are very different, so they are not similar products in terms of how people would respond to them… We are helping the business understand the market in more emotional terms. (Andy)*

The models collectively act as a boundary object that is part of a process among top tier managers and senior executives which builds consensus and facilitates decisions:

> *It's about helping the business get clarity of what [the business itself] is going to look like in 5 years. When we laid them all out on the table we could say well, that's pretty much what our portfolio is going to look like. (Andy)*

Secondly, they achieve a symbolic meaning, representing a strategic objective or mission, a shared vision for the future across professional domains, geographies and cultures:

> *It's the only time that everyone really gets what you are talking about, or they understand it in their own terms… If it's on a spreadsheet or in a strategy document no one really actually has a passion around it, and the best thing we can do is design something that people like, they all get behind it… And then that gives something palpable, something that we can talk about, particularly in global companies where you have lots of different people speaking different languages, different cultures and reference points. (Andy)*

Designers' activities make tangible the diverse business, market and technological requirements. Top tier and mid–level managers including Business Planning and Brand Management use designers' artifacts (prototypes, models, graphic boards and simulations) in building consensus and aiding decision making. Top tier and mid–level managers use designers' artifacts to 'build up passion' around a strategic vision for other constituents.

DAVID

David is a director of a London–based product strategy consultancy employing a dozen or so people, mostly designers but also researchers. He trained and works as a designer, and has about six years' experience in the industry. The company advises its clients on design–related strategic issues such as market positioning, portfolio planning and 'product vision' – what they regard as the front end research of the product design and development process. Most of their clients have their own in–house design and R&D teams and a network of

external design and research agencies. David believes one of the firm's key strength is in synthesizing and conveying complex research in rich, meaningful, visually sophisticated communications.

> *We help develop processes, and frame problems to come up with recommendations about what they should do next… A lot of our clients say we bring rigor to something inherently subjective…What people value is our ability to analyse, structure and synthesise complex issues, then communicate them in a really engaging way. So it's a real use of design skills at that end, creating an engaging artifact, whether that's a book, [a movie,] or a CD or report. (David)*

Like the previous example, the artifacts involved include product mock-ups, but also more abstracted narrative representations. One such is a magazine mock–up which they created to help a client make use of market segmentation data, which is often dense, quantitative, and hard to make sense of. They were tasked with transforming research findings into a visual form for the client's own designers, who would then execute the detailed design work:

> *We might do more qualitative research [into] attitudes and behaviours… then synthesise that to bring it to life. Our output could be a physical printed book, it's very editorial, as if in the style of the magazines that those people would be buying. Making it as visual and tangible as possible but bringing in data where necessary… We place a lot of emphasis on the media we produce, even if it is about higher level strategic recommendations, it is not in the form that people usually receive that sort of thing. (David)*

The point here is that the client is not in the magazine business; the mock-up format is carefully chosen and executed to frame and give sense, to embody and convey subtle and complex meaning with immediate impact "across silos… into the hands of others in order to use it." In other examples product mock-ups are created, but are still somewhat abstract, in that they are not proposals for actual products but are created to symbolise a long–term possibility or objective, or 'product vision'.

> *We sometimes work with [other designers] to articulate this end game, this product vision – it's not really what it will look like, but a manifestation of that strategy we've plotted out. So, if we get all that in place, this is where we could end up, what it might look like. It's something to work towards, a sort of motivating tool for people to use. It also gives people a sense that their work is part of something bigger… Or it can be internal tool for people to say 'look this is what our brand is all about, what we should be fighting for'. (David)*

Like a concept car, these artifacts are never intended to go into production. They are symbolic or emblematic of a future identity of the firm, and give sense to the unknown future, to the company vision, and to employee purpose and belonging (hence company culture).

> *Most of these companies have a corporate mission, a vision… but they are still at a very abstract level, they are just words. This [our work] makes it more touchable… It could be a model, an experience prototype, packaging, accessories, maybe screen mock–ups if there is any interactivity. It is not meant to be a design as such, more of a way of articulating a strategy. (David)*

The artifacts that David and his colleagues create visually articulate complex and uncertain contexts. Their clients use them to embody rich qualitative data and 'bring it to life',

and as symbols of a product strategy vision, for other constituents within and outside the (client) firm.

CONCLUSION

While they may not be typical or representative, both examples suggest roles for designed symbolic objects in strategy which might be described in terms of sensemaking and sensegiving activities, including the following:

- 1) Designers' sensemaking and sensegiving activities interpret, combine and synthesise from diverse contexts, generating artifacts that symbolise complex and uncertain contexts, future concepts or objectives.
- 2) Top tier managers and executives use artifacts in sensemaking, building consensus and aiding decision making around new business opportunities and directions.
- 3) Senior managers use artifacts in sensegiving, to embody rich qualitative data and 'bring it to life', aiding sensemaking by constituents in other operations and as symbols of a strategic vision, to 'build up passion' around a strategic vision for other constituents.

The artifacts described by the designers are important not for their manifest function (as a magazine, smart phone or whatever) but for their symbolic function, which may be regarded as a socially constructed 'status function' (Searle, 1995;   See also Crilly, 2010 for a synthesis of theories of artefact functions). Like a concept car, they must be plausibly designed as if for an end user or customer in order to perform their symbolic purpose**.

This duality raises an interesting question: do the designers design for the imaginary phone user / magazine reader, or for their audience of managers and other stakeholders? I suspect that the answer is both, at different times in the process, and that he/she can never lose sight entirely of either.

Any mention of designers and design is rare in strategy discourse, except concerning the market-facing aspects of product and brand. Should the strategy-as-practice remit include this kind of design activity? Would such recognition increase its usage in industry? Designers might make a more credible case for strategic–level involvement, and engage more explicitly in symbolic sensemaking and sensegiving activities. Managers and strategy may see new potential for design in strategy activities they previously never thought relevant.

Based on empirical research literature, illustrated with quotations from designers, I suggest that designed artifacts may be valuable symbolic resources, with a role to play in strategic sensemaking and sensegiving. There is plenty of discourse and empirical literature on the characteristics and value of designers' visualization and modeling as ways to explore, communicate, and test possibilities (see Lawson, 2004 for a summary). This tends to focus on the 'typical' design process, where a team of designers responds to a brief from a client to meet a market demand. I have focussed here on the less typical, under–examined design activities that are not directly concerned with a marketed product. The less recognised role of designed artifacts in sensemaking and sensegiving should be examined further, to better characterise the way it is done, its recognition among practitioners, and its value, impact and influence. It is a broad topic, and this work–in–progress only scratches the surface.

** In this respect (but few others), this activity might be comparable to design–as–critique, or critical design, as exemplified by Dunne and Raby (Dunne, 1999; Dunne & Raby, 2001). Critical Design similarly balances on the line of plausibility in order to challenge and provoke: "too weird and it will be dismissed as art, too normal and it will be effortlessly assimilated." (Dunne & Raby,).

version. Also to Dr Nathan Crilly of Cambridge University for his candid and helpful comments from which this article developed.

REFERENCES

Brown, T. (2008). Design Thinking. *Harvard Business Review*, *June 2008 86*(6), 84-92.

Carlile, P. R. (2002). A pragmatic view of knowledge and boundaries: Boundary objects in new product development. *Organization science,* 442–455.

Carlile, P. R. (2004). Transferring, translating, and transforming: An integrative framework for managing knowledge across boundaries. *Organization Science,* 555–568.

Cooper, R., Junginger, S., & Lockwood, T. (2009). Design thinking and design management: a research and practice perspective. *Design Management Review*, *20*(2), 46-55.

Cooper, R., & Press, M. (1994). *The design agenda: a guide to successful design management.* Chichester, UK: Wiley.

Crilly, N. (2010). The roles that artefacts play: technical, social and aesthetic functions. *Design Studies*, *31*(4), 311–344.

Cross, N. (2001). Designerly Ways of Knowing: Design Discipline Versus Design Science. *Design Issues*, *17*(3), 49-55.

Daft, R. L., & Weick, K. E. (1984). Toward a model of organizations as interpretation systems. *Academy of management review,* 284-295.

Dunne, A. (1999). *Hertzian tales.* Royal College of Art.

Dunne, A., & Raby, F. Critical Design FAQ. Retrieved March 2, 2012 from http://www.dunneandraby.co.uk/content/bydandr/13/0

Dunne, A., & Raby, F. (2001). *Design noir: The secret life of electronic objects.* Birkhauser.

Dutton, J. E., & Ashford, S. J. (1993). Selling issues to top management. *Academy of management review,* 397-428.

Dutton, J. E., Ashford, S. J., O'Neill, R. M., & Lawrence, K. A. (2001). Moves that matter: Issue selling and organizational change. *Academy of Management Journal,* 716–736.

Dutton, J. E., & Jackson, S. E. (1994). Categorizing strategic issues: Links to organizational action. *Academy of Management Review,* 76-90.

Eckert, C., & Boujut, J. F. (2003). The role of objects in design co-operation: communication through physical or virtual objects. *Computer Supported Cooperative Work (CSCW)*, *12*(2), 145-151.

Fiss, P. C., & Zajac, E. J. (2006). The symbolic management of strategic change: Sensegiving via framing and decoupling. *The Academy of Management Journal ARCHIVE*, *49*(6), 1173–1193.

Gioia, D. A., & Chittipeddi, K. (1991). Sensemaking and sensegiving in strategic change initiation. *Strategic Management Journal*, *12*(6), 433-448.

Gioia, D. A., Thomas, J. B., Clark, S. M., & Chittipeddi, K. (1994). Symbolism and strategic change in academia: The dynamics of sensemaking and influence. *Organization Science,* 363-383.

Hayes, R. H. (1990). Design: putting class into "world class". *Design Management Journal*, *1*(2), 8-14.

Jarzabkowski, P. (2003). Strategic practices: An activity theory perspective on continuity and change. *Journal of Management Studies*, *40*(1), 23-55.

Johnson, G., Melin, L., & Whittington, R. (2003). Guest editors' introduction: micro strategy and strategizing: towards an activity-based view. *Journal of Management Studies*, *40*(1), 3-22.

Kimbell, L. (2009). The turn to service design. In G. Julier & L. Moor (Eds.), *Design and Creativity: Policy, Management and Practice* (pp. 157-173). Oxford: Berg.

Klein, G., Moon, B., & Hoffman, R. R. (2006). Making Sense of Sensemaking 1: Alternative Perspectives. *Intelligent Systems, IEEE*, *21*(4), 70 -773. doi:10.1109/MIS.2006.75

Kolko, J. (2010). Abductive Thinking and Sensemaking: The Drivers of Design Synthesis. *Design Issues*, *26*(1), 15-28.

Lawson, B. (2004). *What designers know.* Elsevier/Architectural Press.

Liedtka, J. (2004). Strategy as Design. *Rotman Management*, *Winter*, 12-15.

Lockwood, T. (2009). *Design Thinking: Integrating Innovation, Customer Experience, and Brand Value.* Allworth Press.

Mintzberg, H. (1994). *The Rise and Fall of Strategic Planning: Reconceiving Roles for Planning, Plans, Planners.* New York: Free Press.

Narayanan, V. K., Zane, L. J., & Kemmerer, B. (2011). The Cognitive Perspective in Strategy: An Integrative Review. *Journal of Management*, *37*(1), 305-351. doi:10.1177/0149206310383986

Olson, E. M., Cooper, R., & Slater, S. F. (1998). Design strategy and competitive advantage. *Business Horizons*, *41*(2), 55 -61. doi:DOI: 10.1016/S0007-6813(98)90035-0

Phillips, P. L. (2004). *Creating the Perfect Design Brief: How to Manage Design for Strategic Advantage*. New York: Allworth Press.

Polanyi, M. (1967). *The tacit dimension*. Peter Smith Gloucester, MA

Powell, T. C., Lovallo, D., & Fox, C. R. (2011). Behavioral strategy. *Strategic Management Journal*, *32*(13), 1369–1386. doi:10.1002/smj.968

Martin, R. L. (2009). *Design of Business: Why Design Thinking is the Next Competitive Advantage.* Harvard Business School Press.

Searle, J. (1995). *The construction of social reality.* London: Allen Lane.

Star, S. L., & Griesemer, J. R. (1989). Institutional ecology, 'translations' and boundary objects: Amateurs and professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39. *Social studies of science*, *19*(3), 387-420.

Starbuck, W. H., & Milliken, F. J. (1988). Executives' perceptual filters: What they notice and how they make sense. In D. C. Hambrick (Ed.), *The executive effect: concepts and methods for studying top managers* (pp. 35-65). Greenwich, CT: JAI.

Stevens, J., & Moultrie, J. (2011). Aligning Strategy and Design Perspectives: A Framework of Design's Strategic Contributions. *The Design Journal*, *14*(4), 475-500.

Weick, K. E. (1995). *Sensemaking in Organizations (Foundations for Organizational Science).* London: SAGE Pubications Ltd.

Whittington, R. (1996). Strategy as practice. *Long Range Planning*, *29*(5), 731-735.