Towards prospective design

Bridgette Engeler

Published online: 06 Sep 2017.

Submit your article to this journal ⎘

Article views: 67

View related articles ⎘

View Crossmark data ⎘

Towards prospective design

Bridgette Engeler[a]

[a] Swinburne University, Australia

Abstract: Design and designers must be aware of their agency in designing for next. Whether creating the next contexts or the artefacts in them, design helps people make sense of and shape multiple alternative futures. Design therefore has a responsibility to unknown futures, and to design futures-focused products and services in a continuously changing world, designers need some understanding of strategic foresight and/or a capacity for anticipatory thinking. Strategic foresight offers a tangible knowledge base that can build this understanding or capacity in designers and design practice. The focus of this paper is on introducing anticipatory thinking and foresight tools and methods into design (through professional practice and education) to explore what designers might experience and create for design projects that are specifically futures-oriented; and to analyse how futures tools and methods might benefit practitioners and students. Building futures-oriented and anticipatory capacity into design practice as well as in learning experiences may better align both the design process and its outcomes with the values, needs and aspirations of prospective thinking and action, and bring about greater global wellbeing. This conceptual paper draws on anticipation theory and futures studies, transition design and design fiction, to propose that anticipation could inform design and innovation processes, increase designer agency, and support goals such as sustainability and longevity to enable the design of products and services in a system that can deliver sustained value over time.

Keywords: Design, Anticipation, Strategy, Foresight, Innovation

1. Introduction

Whether it's disruption to technology, society, human need or culture, people and organisations have a limited capacity to navigate the unknown and unexpected. Whatever is said or done, 'the future' is perceived as out of sight – except in some science fiction or in most technology and economic forecasting – and it's either deliberately or instinctively put out of mind in our wider society and culture. However, 'the future' does not exist, nor will it take care of itself – and there is too much to risk in assuming it does and will do so.

Developing a capacity for anticipation could be considered necessary given that human imagination typically has three shortcomings: it works quickly and effectively, it is stuck in the present, and it cannot tell us how we will think about the future once we get there (Gilbert 2006). Developing a capacity for futures thinking and applying it with design thinking and innovation could free the imagination, expand the effort and extend the time horizon that we use when solving a problem.

2. Design, innovation and anticipation – tools for designing for next?

Like design thinking or innovation or leadership or management skills, being able to think about the future – to build a capacity for anticipation, use 'futures thinking' or apply strategic foresight – is a learned capacity. Futures thinking is both the process of developing a range of views to solve complex problems and a process to explore ways in which the future could develop, so that we can understand the outcomes sufficiently well that people can comprehend what choices and decisions can be taken today to create the best possible tomorrow (Horton 1999).

However, the seemingly close relationship between design, innovation and anticipation is not clearly articulated. While good design has been typically defined by brand and/or financial success, it is increasingly recognised that good business and good design is also defined and contextualized by social, cultural and environmental values. Innovation is problematic and subject to similar challenges in understanding, implementation and expectation.

Design is an acknowledged strategic tool for innovation, competitive advantage, and problem-solving. The rise of design and design thinking as specific and measurable knowledge and skills domains has contributed to the recognition of the value of design to business, particularly in the last two decades. Gaps in understanding about the potential of design have shrunk as the appetite for design as more than aesthetics or form has grown. But as with innovation, design operates in uncertainty; it is a means of giving form or visibility to emergent futures that are changing and changeable, and unknowable or only partly known.

Design therefore needs to stay dynamic and anticipate developments in craft and technology as much as in cultural and social values so that design professionals are as well-equipped as they can be for the demands of the discipline and knowledge base, as well as potential multiple changes. Changes that are commonly found and expected in design now (whether as practitioner, client, industry partner or researcher) suggest new strategies and skills are needed that go beyond what is typically understood as problem-solving, sensemaking or creating meaning.

Designers are active, influential change agents who work in a design space that includes interpersonal dimensions (Cross, 2011). People in any industry or sector typically solve problems by making (rational) decisions from a selection of alternatives, and are mostly concerned with the tools,

methods and techniques that enable them to make those decisions. A designer is more likely concerned with finding a range of possible solutions within certain constraints, either given or observed, before choosing or developing one solution as 'the best'. A challenge for anyone working in uncertainty, in finding and developing multiple solutions, is assuming that the tools, methods and techniques typically used at the different stages of a design process are sufficient, able to support the notion of designing from the future as it emerges (Scharmer 2007), and are grounded in anticipation (Poli 2010).

The integration of design and business with innovation, particularly through the addition of 'design thinking', is increasingly seen in all sectors of society whether business, government or civic. Integrating the disciplines and tools or methods is a way to drive innovation, improve problem-solving and outcomes, develop understanding of the different needs of people and organizations across cultures and geographic boundaries, and increase entrepreneurial thinking and action. So while it may seem superfluous to state that design (including design education) needs to anticipate and respond to shifts in design, technology and society, it's no more unnecessary than stating that business too needs to do this. It may be that because design and business are so intrinsically linked to culture, values and society, this connection is too easily assumed and not manifested.

Design researchers Evans & Sommerville (2005) and Jensen (2005) suggest that designers must develop a capacity for futures thinking and for creating multiple images of futures while in undergraduate education, and that futures thinking should be therefore part of a design curriculum. Designers have always needed to be conversant in and comprehend the language and theories of business, leadership and management as well as design management, and it is now clearly expected that they can at least comprehend the language of strategy, systems and innovation, even the language of complexity. They must now also be able to design for robust future states and for the anticipated needs of generations to come.

Looking to the past to understand futures

Over the last ten years in particular, the term 'design thinking' appears to have moved from being a specialist competency of professions rooted in creativity, and in primarily industrialised economies, to become something anyone can learn and every organisation needs. Strategic foresight, design thinking and innovation share some fundamental principles and similarities in principles, methods and processes. All are potential means to help people and organisations, especially business, plan for the future, make sense of complexity and navigate disruption.

Strategic foresight is less widely applied or understood than design thinking or innovation but it is increasingly permeating the fields of business, design, management, social innovation, strategy and entrepreneurship in a similar way to design management and design thinking. It too is aligned with one discipline – strategy – over another – creativity – but it's not primarily driven by industrialised economies, where it may be most needed and beneficial (Hines 2007; Saul 2002; Slaughter 2008). And while strategic foresight skills can be learned and a capacity for futures thinking can be developed, a capacity for anticipation is not universally acknowledged as an intellectual asset or capability every organisation needs.

'Design thinking' may have increasing exposure and application, and an extensive literature but this is not to say that everyone in design or management or business is a designer or uses design thinking or wants to innovate. 'Futures thinking' literature is not as extensive but this doesn't prevent many from claiming the title of 'futurist' whether they deliberately use futures thinking or are a professional futurist qualified in the discipline of strategic foresight. Understanding of the process of

anticipation is much more limited, although the intention of changing to a desirable future state is common to all.

When it comes to academic literature, the relationship between 'design thinking' and 'design strategy' or 'innovation' can be unclear; sometimes design thinking is considered an essential part of innovation yet the two concepts are completely independent (Best 2006, Ambrose 2010, Martin 2009b, Brown 2009). Similarly the connections between 'anticipation' and 'futures thinking or 'strategic foresight' can be ambiguous; their connections to 'design thinking', 'innovation' or 'strategic design' are not always well defined, making it harder to perceive the distinctions between them and their role in professional practice or research.

With 'futures thinking', there is development of the concept in academic literature over 40 or more years (Slaughter 2001; Slaughter 2008). The objective of foresight ranges from building a bridge from the present to the future in order to reduce uncertainty, and to re-educate organisations and reduce risk (Saul 2002; Hamel 1994; Hines 2007). However, expectations about what futures thinking is and isn't, what works and what doesn't – especially when it comes to predictions, trends and 'the next big thing' – limits understanding of the capacity and need for anticipation and foresight to be developed and methods to be implemented (Poli 2010, Ruff 2006; Slaughter 2005).

Design and people can obviously benefit from human-centred action research. Design gives structure and form to futures thinking and brings life to images of alternative futures; futures thinking and strategic foresight methods bring a prospective dimension to design and perhaps a more rigorous way of approaching design for the long term. organisations can benefit from foresight and from design thinking (Ambrose 2010; Best 2006; Brown 2009; Fry 2009; Lawson 2006; Martin 2009b). All can help organisations to more-deeply understand people's wants and needs (spoken and unspoken) and link them to industries that consciously use design for benefit.

Krippendorff proposes design as 'making sense of things' (Krippendorff 1989). But in a highly complex world, we are making sense of unknown or uncertain things. Drawing on Buchanan (2015), Peschl and Fundneider (2016), Poli (2010) and Scharmer (2007), design needs to anticipate and design for the uncertain, the emerging future, the unknown. Design is not solely about the thing that is created: it is imbued with the meaning of the impetus for creating it and the meanings of those who use it.

Towards a futures-oriented approach to design, innovation and problem-solving

Design is a discipline that, whether graphic, industrial, multimedia, interior or architecture, and whatever the intention, purpose or function, requires the shaping of form (Wahl 2008). In the end, there is an output and something is made or produced.

It is clear that the design process becomes a tangible link between client and designer or design team, theory and practice, sandpit and real-world learning, technology and making, design thinking and innovation, research and implementation – and short-term vs long-term thinking. Design principles and processes become a means for students to consider the relevance, usefulness and consequences of design artefacts and output, allowing for agency, individual curiosity and critical thinking to be understood as significant contributors to the thing that is produced.

One of society's biggest challenges is enabling people to undertake a future-oriented design activity e.g. for a future more than 5 years away. To achieve this means providing participants in a design activity with either scenarios or a scenario-based framework for ideation as they have limited capacity for prospective thinking unless they are also undertaking or are have knowledge of futures

studies. A similar challenge is ensuring design teams and practitioners have sufficient understanding of futures thinking and anticipation, and proficiency in strategic foresight methods and tools to implement them in design activities. While scenarios are a clear starting point, they are limited – as are trend-based tools and many corporate strategy frameworks. Participants must have the capacity to challenge the narrative/s that scenarios can bring to any project.

Exploring multiple possibilities

While futurists use a variety of tools and techniques in foresight work, at the core of anticipation and futures thinking is the notion that there is no one determined future (Bell 2008). Scenarios are a means to develop and explore alternative futures, using imagination and creativity to design the most preferable future in the short term. In particular, scenarios help organisations think in terms of future outcomes whether considering services, products, operations or strategy. Design is fundamental to experiential scenarios whether optimistic or ideal, pessimistic or dystopian or disaster – or of a future not very different from the present.

The key point of scenarios is the conditions envisioned and created in these three environments i.e. what is imagined and designed. Scenarios are a powerful means of nutting out and clarifying shared visions of the future considering questions like 'Who is in these future worlds?', 'Who is privileged?', 'How do people think and engage with one another?', 'Are there risks?', 'How do people interact and what tools do they use for this?' and 'How do they navigate their environments?'. The design process can use scenarios as the potential worlds the outcome will be part of and determine.

Designers are practical agents of imagination, both anticipating the future and creating the sensory blueprints for the objects and experiences of tomorrow. Designers/design thinkers are primary agents in articulating the future, and therefore in helping humanity see and negotiate (or refuse) the transition.

Design is about systems, services and practices as much as artefacts: better-designed systems improve utility, cut costs, and improve resource use. Design plays a key role in organisational innovation processes, including the development of integrated product and services, or inventing new types of value chains, alliances and collaborations.

Fry (2009) and Tham & Jones (2008) argue for design to be applied in ways that emphasise human desire in organisations, business, communities and user-centred thinking. Integrating strategic foresight into service design could allow for a future-oriented solutions-based approach to addressing the critical focus areas of these seemingly insurmountable challenges.

Wood (2008) proposes a way to move design beyond aesthetics by developing a new profession that he calls "metadesign", "a comprehensive co-design methodology in which the metadesign team also codesigns its frame of reference". Fry (2009) argues for more rigour in thinking about what is designed, the reasons for, outcomes resolved and materials and asks for greater consideration of the consequences in the interest of accountability and responsibility to a common good. Both have deep connections to the design management process and how design is interpreted and used in organisations. Their work is clearly informed by anticipation and foresight tools and processes, which support conditions for learning that is contextual: embedding creativity, design and innovation into individuals, teams and organisations; unlocking opportunities through people-centred approaches; and realising design-led innovation with a longer-term view.

Tham & Jones (2008) suggest that sustainability "invites the designer into more strategic and systemic territories, and into a more complex set of collaborations; working with other disciplines,

with users, and with representatives of wider human and environmental concerns, than what 'design as usual' implies. It suggests the need for a design that invites its participants to operate with fluidity at a wide range of cognitive levels, and to cross-fertilise ideas of different levels of complexity" (2008 p2). Sustainability is an imperative intrinsically linked to futures thinking, and it should be in design.

Kumar (2009) links design thinking, business and organisation goals to a human-centred approach to innovation, noting that to "create innovations that have a good fit with users", the designer's focus needs to shift "from products that people use, to what those people do – their behaviours, activities, needs, and motivations." (Kumar & Whitney 2007, cited in Kumar 2009, p. 92).

Arguably designers have long understood and used both emotional and experience elements to enhance the interactions among customers and product offerings. We are now at a point in human development and social continuity of applying this interaction knowledge to all aspects of doing business.

"Design is fundamental to all human activity. At the nexus of values, attitudes, needs and actions, designers have the potential to act as transdisciplinary integrators and facilitators" (Wahl 2008 p. 72). Like Tony Fry's philosophy of sustainment, Wahl (2008) suggests that rather than believing we are capable of designing universally-applicable blueprints to bring about sustainability or 'better' design using prediction and control-based, top-down engineering, we can present design outcome(s) as an emergent property of the complex dynamic system in which we all participate, co-create and adapt to interdependent biophysical and psycho-social processes.

Wahl's proposed approach has enormous consequences for the way design is viewed, used and valued. As an integrative and transdisciplinary process, it can inform more holistic solutions that promote the emergence of systemic health and sustainability as properties of the system, not just short-term manufactured and potentially destructive fixes. This shift in approach is also emergent from the complex dynamic system that contains culture and nature, and of which we are participants (Wahl 2008). In this system, appropriate decision-making bears complex eco-social dynamics that require us to consider insights generated by a diverse range of perspectives and disciplines, not just our own desires, all of which futures thinking and design thinking theoretically encourage and seek.

But design – and designers – must be conscious of this. The material intentionality of design expressed through "the interactions and relationships formed by consumer products, transport systems, economies, systems of governance, housing and settlement patterns, and resource and energy use" is also the expression of the designer and design brief. Designing occurs within the complexity of a reality that includes social, technological, and aesthetic values spheres: a complexity that cannot be reduced to any one of these spheres (Wahl 2008).

From every different perspective on design, the nature of design and of nature itself will show up quite differently. Interestingly, many sustainable design approaches are primarily grounded in the science and mechanics of the process. An expanded multi-perspective view can enable designers to more comprehensively address the complexity of today's challenges by including the individual, cultural and social dimensions that contribute to the creation of possible and preferred futures. A first step is to foster more collaboration across and within the traditional declination and structure of the design disciplines to create transdisciplinary design (Wahl 2008).

Wahl (2008) proposes that transdisciplinary design will make it possible to create engaging local, regional and global visions of preferred futures, that is ultimately design for sustainability. The underlying goals and intentions of design solutions based on futures thinking are the maintenance and improvement of systemic health and the facilitation of healthy and cooperative interactions across the whole spiral of human worldviews and value systems, as well as across all physical and

temporal scales of material design (Wahl 2008; Zeiler 2009b). This kind of design perspective fosters conscious and responsible design, intended for the creation of healthy societies in healthy environments.

What could be termed 'bad' design is design that negatively affects our complex system of individual, social and cultural perspectives. Bad design possibly comes about because we fail to consider the design within the complexity of the world it is created in and the futures is might exist for. It is only with a change in how we live our day to lives that design will change; and this is likely be a far more effective way of problem-solving than the creation of more artefacts and technical fixes (Wahl 2008).

Many businesses apply a microscope to dissect all aspects of engagement into smaller and smaller pieces for improvement and refinement (Martin 2009b). While examining every last detail can be valuable, design thinking is effective at re-engaging the imagination to see a more complete picture (Brown 2009). Including foresight in a design process is an additional means to ensure that alternative perspectives are part of strategy-making. The principles and practices in most design professions already see, and allows business to seize, the kinds of opportunities that present themselves. Professionals using design thinking know the details are important for success, yet they also have flexibility in the way they see a project: flexibility that allows them to take different views and see how those details support a larger idea individually and as a whole. Design thinkers constantly change views, and zoom in and out to keep the big idea and the details connected and meaningful. Futures thinking and design thinking enhance this flexibility and make it easier to keep the big idea in mind.

Bringing foresight and design into organisations

The nature of design is that it almost innately demands empathy, insight and innovative approaches to problem solving but it doesn't always reject traditional means of addressing the same challenges. Design management could be seen to focus less on the human characteristic of empathy and more on the commercial benefit of innovation. But design management can lead to design that creates value and enhances the user experience; it helps design find ways to give meaning to lifeless objects and touch human emotions on a fundamental level. The design process can focus on engaging in future-creating inquiry. The design experience can bring insights from informed practice into a 'real-world' social system.

Design has the tools for visualising complex large scale systems and the insights thus derived can be applied to improving the quality of the customer's experience, improve the efficiency of the process and offer benefits across the spectrum of applications (Hargadon 2005).

The intrinsic nature of anticipation is what makes it such a powerful partner to design and innovation. Often the biggest challenge is to identify the real problem that must be solved; this is where using foresight methods in the design process can help at the early stages of strategy and planning (Hargadon 2005).

Bringing foresight and design into organisations takes this problem solving aspect one step further. Then the tools and techniques from the field of design such as ethnographic research, rapid prototyping and conceptual brainstorming integrate with the pragmatic business frameworks of strategy, analysis and metrics, and the principles of strategic foresight to create and provide holistic and transcending roadmaps for the individual as well as business innovation and competitive advantage. In this context, design evolves away from traditional notions of giving form (and function)

to becoming a meaningful and valued part of the self that can also drive organisation and commercial strategy.

Design can give back as much as it takes. It has the potential for sensitivity and to understand the responsibility one carries for future generations. Perhaps foresight can help design (and business) look beyond the immediate gratification of one's own wants to the very real and undeniable needs of those who have nothing. These issues are discussed by the voice of emerging generations, those who entered the online world as adults and discovered the ways we all connect together across barriers of geography, language, culture and time (and who want to co-create the things they use every day).

In summary

The issues that face us now - climate change, environmental degradation, poverty, speed of information flow and the ever decreasing size of the world in which we live thanks to ubiquitous communication and technology – are big. Design won't solve them alone. But when it comes to sustainable development and strategies for the future, the sender and the receiver are ready for a message. People are demanding answers to problems that face us all, companies are realising they have a greater responsibility to the world in which they operate. Strategic foresight challenges complexity within the broader context of an entity's system at levels not usually discernable by the entity itself – and design challenges at external levels that are highly visible and tangible such as form, function, materials and waste.

The solutions to the world's 'wicked problems' (whether linked to design or not) are more likely to be new processes, lifestyles and changes in meaning, rather than purely material or promotional artefacts. Sustainability is an emergent property of appropriate interactions and relationships among active participants in the complex cultural, social, and ecological processes that constitute life in this century. The necessary shift towards more appropriate and sustainable modes of participation requires that design and education contribute to a widespread increase in social and ecological awareness through transdisciplinary and anticipatory design dialogues.

References

Ambrose, G & Harris, P (2010) Design Thinking, AVA Publishing, Lausanne

Bell, W (2008) Foundations of futures studies (Volume 1) New Brunswick, NJ, USA, Transaction Publishers

Best, K (2006) Design Management AVA Publishing, Singapore

Brown, T (2009) Change by Design Harper Business, New York Business Week 2009, Special report, 'The value of design'

http://www.businessweek.com/innovate/content/jan2010/id20100127_150531.htm?chan=innovati on_ special +report+--+the+value+of+design+2010_special+report+--+the+value+of+design - viewed 27 December 2016

Cross, N (2006). Designerly ways of knowing. Berlin: Springer

Cross, N (2011) Design Thinking: Understanding How Designers Think and Work. Berg Publishers

Cross N 2007, Editorial 'Forty years of design research', Design Studies Vol.28 No.1, January

Design Dialogues http://designdialogues.com/534/ - viewed 16 November 2015

DMI Journal VOL. 23 NO.4

DMI Journal VOL. 25 NO.1

Evans, M. and Sommerville, S. (2007) 'Design Led Futures: Futures Thinking in the Design Curriculum', Connected 2007: International Conference On Design Education, University Of New South Wales, Sydney, Australia.

Fraser, HMA (2007) 'The practice of breakthrough strategies by design' Journal Of Business Strategy Vol. 28

Gilbert, D (2006) Stumbling on Happiness. Harper Press. London.

Haith, MM (1997) 'The development of future thinking as essential for the emergence of skill in planning" in Friedman, SL and Scholnick, EK The Developmental Psychology of Planning. Lawrence

Erlbaum and Assoc. New Jersey

Hamel, G & Prahalad, CK (1994) Competing for the future. Boston, MA, USA, Harvard Business School Press

Inayatullah, S (1998) 'Causal layered analysis: poststructuralism as method'. Futures 30, 815-29. Jensen, C. 'Future Forecasts in Product Design: Guidelines to predicting the future.' Designing Products for the Future, available at: http://www.ivt.ntnu.no/ipd/fag/PD9/2005/artikler/PD9artikkel_carmilla_Jensen.pdf, 27 December 2016

Krippendorff, K. (1989) one the essential contects of artifacts or on the proposition that "Design is making sense of things." Design Issues, 9 (2)

Kumar, V 2009, 'A process for practicing design innovation', Journal of Business Strategy, vol. 30, no. 2/3, pp. 91-100

Lawson, B (2006) How Designers Think Fourth Edition Architectural Press, Elsevier, Oxford

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

Martin, R (2009) The Opposable Mind Harvard Business School Publishing, Massachusetts

Martin, R (2009b) The Design of Business Harvard Business Press, Boston

Peschl, M.F. & Fundheider T. (2016) Design as anticipation and Innovation DRS conference proceedings

Poli, R, (2010) The many aspects of anticipation, Foresight 12 (3) 7-17

Rowe, PG (1987). Design Thinking. Cambridge: The MIT Press

Ruff, F (2006) 'Corporate foresight: integrating the future business environment into innovation and strategy' International Journal Technology Management Vol. 34, Nos. ¾

Saul, P (2002) 'Using futures studies to design tomorrow's products: a case study' Foresight 4,2 pp 21-24

Seginer, R (2003) 'Adolescent future orientation: An integrated cultural and ecological perspective'. In W. J. Lonner, et al (Eds.), Online Readings in Psychology and Culture (http://www.wwu.edu/~culture),

Center for Cross-Cultural Research, Western Washington University, Bellingham

Simon, HA (1973) 'The structure of ill-structured problems' Artificial Intelligence, 4: 181

Simon, H A (1996) The sciences of the artificial (3rd ed.). Cambridge, MA: MIT Press

Slaughter, RA, Inayatullah, S & Ramos, JM (2005) The knowledge base of futures studies. Brisbane, Australia, Foresight International

Slaughter, RA (2001) 'Knowledge creation, future methodologies and the integral agenda' Foresight, the journal of future studies, strategic thinking and policy 03(05) pp 407-418

Sturm, U (2005) 'From Master-Design to Meta-Design' http://attainableutopias.org/tiki/AcademicPapers - Viewed 27 December 2016

Voros, J. 2003. A generic foresight process framework. Foresight. 5, 3: 10-21