

DESIGN INNOVATION FOR SOCIETAL AND BUSINESS CHANGE

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Abstract

We present two approaches for addressing complex societal and business problems: frame creation and design led innovation. Both methods combine a broad systems approach to problem solving together with the reframing of problems based on uncovering deep underlying human values and needs. While the practical usefulness and viability of our methods has been established through a series of projects, design methods need evaluative criteria to enable a more formal discussion and assessment of projects. This is particularly important for enabling comparisons across studies, and/or when attempting to communicate the value of design to non-design audience. For this purpose, we suggest articulating the steps of design methods using S.M.A.R.T. criteria from the management literature. We describe the aims, means, and evaluative criteria of each step of our methods, which can be likened to the specific (S) and measurable (M) indices of S.M.A.R.T. Thus, S.M.A.R.T. descriptions enable management of projects by means of their own design methods and contribute to establishing sound design innovation methodologies that can eventually be scaled up for large research programs and educational purposes.

Keywords: Design methods, Innovation, framing, measurement

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1 INTRODUCTION

Design is reaching out to both society and business as a new approach to innovation for solving complex problems that cannot be solved by traditional problem solving methods alone (Dorst, 2015; Brown, 2009; Verganti, 2008). Innovation involves introducing a new product or service into the market that results in sustained changes in behavior of that market (Dong, 2013). Design is particularly suitable for achieving innovations because the range of sensibilities and techniques characteristic of designers lend particularly well to solving problems that are unable to move forward in their original terms. For instance, the design activity of (re-) framing provides an alternative perspective on a design task and is seen as an integral part of the practice of expert designers (Cross, 2007; Dorst, 2011; Schön, 1983). In addition, the design practice of gathering “deep customer insights” supports re-framing by uncovering underlying human values and needs (Bucolo, 2012). Linking design and innovation is design thinking, design-driven innovation, and a variety of other terms that fall under the larger category, design innovation. Existing methods, or approaches, for design innovation have been developed by, among others, Stanford Design School (D.School, 2011), IDEO (Brown, 2009), Philips Design (Gardien, 2006), and Rotman Business School (DesignWorks, 2014). At the Design Innovation research centre of the University of Technology Sydney, we study innovation practices and develop design innovation methods for both the private and the public sector. In this paper, we offer two approaches to design innovation that combine a broad systems approach to problem solving together with the reframing of problems based on uncovering deep underlying human values and needs. Our approaches, frame creation and design led innovation, are theoretically applicable to a range of situations; however, in the current paper we show how they can be particularly useful for solving today’s societal and business problems, respectively.

While the practical usefulness and viability of our methods has already been established through our projects, design methods need to be made explicit and measurable to enable a formal discussion and assessment of projects. This is particularly important for drawing comparisons across studies, and also for communicating with a non-design audience. We argue that the steps of design methods need to link objectives/aims with action plans, thus enabling management of projects by means of their own methods. For this purpose, we propose using S.M.A.R.T. criteria from the management literature (Doran, 1981). In the sections to follow, we detail our methods via case studies, written explanations, and, importantly, instructional tables that divide each step into their “aims”, “means”, and “criteria”. We use “aims” and “means” to represent S.M.A.R.T.’s “S” index; each one of our steps is defined in terms of a “specific” goal. And our evaluative “criteria” is used to reflect S.M.A.R.T.’s “M” index; our steps provide a “measurable” indicator of progress. The S.M.A.R.T. approach can be adapted to any design method and has already been suggested elsewhere for managing the common design technique of framing (Vermaas, 2013). We extend upon it in the current paper to describe the entire array of steps in both our frame creation and design led innovation methods for societal and business change.

2 FRAME CREATION AND DESIGN LED INNOVATION FOR SOCIETAL AND BUSINESS CHANGE

The frame creation method was developed by the second author (Dorst, 2011) as a means to address complex problems that involve many different participants with different values and needs. The problem itself is typically stuck in a deadlock, and frame creation provides a means to generate alternative *approaches* to the problem, based on uncovering commonalities in deeply underlying values and themes. Thus, it is particularly suited to complex societal problems because it provides a broad systems approach to solving problems by satisfying many potentially conflicting needs simultaneously. The design led innovation method was developed by the third author (Bucolo, Wrigley, & Mathews, 2012) as a means to create strategic advantage for organizations over their competitors. It involves innovating across the entire business model rather than simply at the product level. This is achieved by developing value propositions based on deep customer insights and then aligning strategy and branding to these accordingly. Thus, both methods can be seen as providing a holistic approach to problem solving whereby frame creation involves the integration of solutions in a system of stakeholders, and in design led innovation the integration of strategy and products/services within an organization.

3 DESCRIPTION OF METHODS

Our two methods each represent a process, both depicted in the form of a nine-step model. While the steps reflect a general progression towards the end goal, they constitute an iterative process that involves much movement back and forth between steps. We present each method in such a way to as to detail each step adequately, but to also capture the underlying principles or practices. We achieve this via describing our methods using the following descriptions: an illustrative case study, a written account of each method, and a step-by-step tabular account. For each method, we begin by setting the scene with a real problem or scenario and describing its resolution using the respective method. These case studies were used to inform the development of our methods, and the corresponding names of each step have been included in brackets throughout the text for cross-reference to the subsequent descriptions of the methods. After the case study, we provide a written account of the respective methods, explaining each step and also the principles linking them together. We then accompany these written descriptions with a step-by-step tabular representation of the steps of each process. The tables are intended to provide a directive account of each step, enabling a clear overview of the objectives and actions for each method. The steps of the tables are further divided into three sub-components: “aims”, “means”, and “criteria”. By “aims”, we refer to what each step intends to achieve. By “means” we refer to how it achieves this, whereby we describe an outline of the process as opposed to prescribing strict design tools. And by “criteria” we refer to an evaluative indicator that informs when each step has been satisfactorily completed. The criteria section, therefore, can also be seen as constituting a project brief, or a mental checklist, whereby successful fulfillment of each index can be used as evidence of successful completion of the project. Not only does this description provide the problem-solver with detailed instructions, but it also enables the management of design projects by means of the steps discerned in their own methods (see Vermaas, 2013).

In interpreting the following sections, the case studies can initially be taken as a story to get an idea of the types of situations in which the methods can be applied. Later, when reading the subsequent text and tables, they can be referred back to again by reading the full descriptions of each step that correspond with the names given in brackets. After having read the explanatory text, the tables can then be used as a freestanding guide when conducting design projects. We now present our two design innovation approaches for societal and business change: frame creation and design led innovation, respectively. We begin with an example of the re-design of Sydney’s Kings Cross using frame creation by the Designing Out Crime research centre of the University of Technology Sydney.

4 FRAME CREATION: DESIGN FOR SOCIETAL CHANGE

4.1 Illustrative Case Study: Violence in City Entertainment District

Sydney’s night-time entertainment district in Kings Cross became a setting for antisocial behaviours and escalating crime. High volumes of young people attend on Friday and Saturday nights, and activities are predominantly concentrated into only a small stretch of nightclubs. Some of the problems that occurred include drunkenness, violence, petty theft, and drug dealing. Previous attempts at solving the problem included the implementation of strong-arm tactics aimed at increasing police presence; however, the additional security measures failed to enhance feelings of public safety and instead resulted in a grim atmosphere for all (*archaeology*). The Designing Out Crime team realised that the situation had previously been treated as a law-and-order problem requiring law-and-order solutions; however, the people involved were not actually criminals (*paradox*). Instead, they were just young people looking to position themselves in a social setting and to have a good time (*themes*). The lack of structure of the nightspot together with the sheer volume of young people meant that they were becoming bored and frustrated, and consequently were not having a good experience at all – a problem only exacerbated by the additional security measures. The designers proposed a simple analogy in which large volumes of people already successfully come together and interact in a harmonious fashion: a music festival (*frames*). They then took the analogy further and approached the problem *as if* they were dealing with a well-organised music festival. By reframing the problem in this way the designers stepped away from law-and-order solutions and asked themselves what they would do if they were organizing a music festival and this triggered new scenarios for action, as a well-organised music festival offers many facilities that are not currently available in the Kings Cross district but

could easily be designed in (*futures*). The designers worked in conjunction with the local government authority for Sydney (*context and field*) to execute a variety of solution directions. One example was to organize transport. In a music festival, people would be able to get there but also leave when they want. In the entertainment district, train services ended around the same time that peak influx of patronage begins. Apart from the obvious improvement of providing more trains at the nearest station, the designers also implemented a back-up system of temporary signage to lead towards a different nearby station that has trains running all night (*futures*). Since the project in Kings Cross, the local government authority for Sydney has implemented similar changes in other areas of the city (*integration*), thus reinventing itself as an active conductor of life in the city (*transformation*).

The Kings Cross example shows how frame creation provides an entirely new approach to a complex problem situation, rather than attempting to generate solutions to a problem that cannot move forward in its original terms. A full description of the Kings Cross scenario and its resolution can be found in a previous paper by the second author (Dorst, 2013). Next, we detail each individual step of the frame creation method as alluded to in the case study, making reference to the underlying principles and practices.

4.2 Method

The frame creation process involves multiple iterations of closing in on the problem situation and broadening out to the wider context in which it evolved. To begin with, the problem-solver examines the current situation at hand. The problem as presented is considered, including previous attempts to solve it (*archeology*). This process should give the first insights into the working dynamics of the organization involved, thus identifying opportunities and barriers that will affect the solutions generated and executed later in the process. From this analysis, competing tensions and interests arise and give clues as to what is making the problem particularly hard to solve. While many problems may be apparent, there should be an overarching deadlock, or paradox, between two seemingly incompatible needs that prevents the problem-owner from moving forward (*paradox*).

Once the paradox is identified, the problem is cast aside and only revisited much later on in the process. As explained earlier, many of today's complex problems cannot be solved directly, which is why traditional problem solving methods fail. While we know the outcome that we want, we often do not know the means by which this can be achieved. Rather than jumping instantly to find solutions, the problem-solver should move out from the immediate problem and start uncovering deeper needs by delving into the context in which the problem arose. First, they investigate the strategies and values of stakeholders who are directly involved in either the problem and/or will be involved in its eventual solution (*context*). Then, they move out further from the immediate problem again, and consider the broader field of players who *could be* affected by the problem or involved in its resolution (*field*). Extensive interviews are conducted with individuals in the context and field, and techniques borrowed from hermeneutic phenomenology are used to filter through texts and uncover the deeper factors underlying their needs, motivations, and experiences (*themes*). Because at this point the problem-solver is also considering people and organizations beyond the immediate problem, the themes identified will encompass a much wider breadth and depth than what would be achieved from consulting the inner circle of stakeholders alone. Therefore, these themes, while relevant to the problem situation, should also extend far beyond to reveal universal needs that connect individuals. Importantly, these underlying universal needs might be very different from what would be suggested by the problems encountered in the *archeology* stage.

Common themes that emerge and are shared by many participants are used to go on and select frames. Frames arise by thinking of existing scenarios or metaphors in which the relevant themes are addressed (*frames*). Thus, the frame provides a new way of looking at a situation and therefore implicitly suggests solution directions. By making comparisons to desired situations, one can use it as an instruction to get towards desired outcomes; e.g. we can ask ourselves, "If the situation were treated as if it is... then we would..." Thus, at this point, the problem-solver begins closing in on the problem situation again by turning their efforts towards ways in which the underlying needs and values (and consequentially, the initial problem) can now be addressed.

To begin mapping solutions back to the current situation, frames are tentatively tested against the (now opened up) problem situation. The problem-solver begins experimenting with ideas regarding how they would use the pattern of relationships between elements within the frames to direct solutions for the current problem (*futures*). At this point it is particularly apparent why it was essential to consult

many participants while uncovering themes – the richness of themes allows for a broad scope of solution directions that should be fulfilling for many participants. Thus, the feasibility and likely success of frames is established here before actual solutions are implemented. Then, a critical evaluation of what frames and futures are feasible in the short- and longer-term is performed, resulting in an actual business plan with accompanying transformation agenda and strategy (*transformation*). Once the transformation is underway, it is important to make sure the frames and solutions are well integrated into the broader context of the organizations involved. The new frames from the original problem might also apply to other areas of the organization or beyond – hence the solutions, while directly relevant to the problem situation, should also provide opportunities for learning outside of the immediate problem (*integration*).

Table 1 presents a step-by-step overview of this method that can be used as a checklist during projects. Following this, we introduce the design led innovation method beginning with an example of a re-design of a medical devices company.

4.3 Frame Creation Overview

Table 1. Frame Creation Overview

Step	Aims	Means	Criteria
Archaeology	An understanding of the past history of the problem situation	Invite presentations on the problem situation by experts – analyse the role of the problem owner, past attempts to solve it, and what could have happened if another path was taken	Archaeology should capture: - Tensions or competing interests and values - Flexible and non-negotiable boundaries that can limit solutions
Paradox	An identification of the two most competing needs that cannot exist together	Think of tensions and opposing forces that make the problem hard to solve	Paradox should capture opposing needs that prevent the problem owner from moving forward
Context	A description of the stakeholders who have been involved with the problem situation and/or will be involved in its solution	Discuss current strategies and values and needs of stakeholders	Context should: - Contain powerful or controversial stakeholders - Identify significant influences on their behaviour
Field	An analysis of players who might be involved with the problem situation or its solution	Discuss the power, interests, values, and practices of the players	Field should: - Contain players at opposing ends of spectrum of values - Identify significant influences on their behaviour
Themes	An understanding of the deeper factors underlying the needs, motivations, and experiences of the stakeholders and players	Use hermeneutic phenomenology to uncover deeply hidden themes	Themes should be: - Universal - Deeply personal - Extendable beyond immediate problem - Relevant to the problem situation
Frames	A principle that provides a new perspective on the problem situation and directs its resolution	Identify themes shared between the players Think of existing scenarios that realise these themes in order to define frames	Frames should: - Fit the problem situation by spanning and integrating a broad range of its issues - Be clear and endorsed by all stakeholders
Futures	An exploration of a frame's ability to lead to realistic and viable solutions	Draw similarities between problem situation and frame to guide solutions Play out possible scenarios from a frame	Futures should lead to value propositions for all stakeholders and players involved
Transformation	A business plan, transformation agenda and strategy for implementing solution directions	Discuss solution directions with stakeholders Investigate changes in practices required to implement solutions	Transformation should: - Be feasible - Have quick short term results and/or long term changes in the practices of the organisations
Integration	A determination of how the acquired knowledge might be applied in settings beyond the current problem situation	Assimilate what has been learnt into active knowledge of the organisation	Integration potentially: - Identifies further opportunities - Leads the organisation to be proactive in its reaction to the environment

5 DESIGN LED INNOVATION: DESIGN FOR BUSINESS CHANGE

5.1 Illustrative Case Study: Non-Competitive Medical Device Company¹

Cardiac ABC, a small, family-owned medical device company specializing in manufacturing cardiac monitoring equipment, was struck by the global financial crisis and no longer remained competitive in the changing economic climate. They had always prided themselves on producing high quality medical devices with unique technical features; however, most of their growth had been through productivity efficiencies leading to cost savings. After the crisis they were forced to compete even further via cost, but they had already reduced costs as much as possible and there was nowhere further to go. They had access to traditional business strategy advice programs but found these unsuccessful as they focused on looking to find further cost savings and they needed a new approach so they turned to a design led innovation (DLI) program. Through DLI, they were encouraged to explore top line growth by finding new market opportunities through envisaging an alternative future their business could provide. In their original business, their supply chain consisted of selling to a distributor, then on to hospitals, then nurses, and then eventually the patient who would be hospital-bound while receiving medical care (*understanding*). To explore a new business model and growth potential, they proposed the idea of making the product directly available to the end-user, the patient, via pharmacist or specialist health store sales (*envisaging*). This meant they now had to consider the pros and cons a patient might experience when dealing with their product at home alone. In the hospital, the patient is being monitored by a nurse and does not have to worry about how to access or use the product. In the proposed scenario of direct home-use, patients encounter the new problem of being responsible for their own health. However, they also have the advantage of being able to carry on with their lives as per normal (*empathise*). Thus, the company assumed that wellness is a problem and that their patients are busy, independent people who want to keep out of hospitals. Therefore, rather than focusing on selling cardiac equipment per se, the company turned their attention towards the idea of selling quality medical help in the comfort of the patient's own home (*proposition*). In order to verify whether people really do care about wellness and independence, semi-structured interviews were conducted with real customers using narratives detailing customer journeys with the product/service as prompts. As expected, the customers confirmed that they do value wellness and independence; however, they would not consider purchasing the equipment unless they were actually admitted into a hospital, in which case going direct to the end-user would not work. A relationship with the hospital was still needed. Thus, the problem was reframed again as one of patients still wanting hospital care, but wanting the intervals between visits to be longer (*provocation*). Based on these insights, the company proposed a new, now risk-mitigated value proposition of providing a service that prolongs the intervals between hospital visits, thus allowing patients to maintain independence yet still also have access to hospital care when needed. Therefore, the product would still be made available to the patient through the hospital when they came in with a problem; however, to cut down on going through all the previous channels, the distributor would recommend a selling point (e.g. a chemist) that would be advertised directly at the hospital. Independence and minimal time confined to hospital would be afforded by linking the product to a remote monitoring system so that the patient can still come in to receive hospital attention in the event of any problems, but can also carry on with their normal life at all other times (*re-design*). The company compared their current and proposed future business models to identify the changes they needed to make to action these solutions (*connection*). The aforementioned solutions were implemented in one hospital (*alignment*) and then eventually expanded to other hospitals. Furthermore, all staff members were informed of the new 'company purpose' to increase intervals between home and hospital, and ensured all their future actions were aligned with and reinforcing this purpose (*empowerment*).

This example shows how design led innovation uses a holistic approach to provide opportunities for growth by innovating across the entire business model rather than simply at the product level (Bucolo, et. al, 2012). Next, we detail each individual step of the design led innovation method as alluded to in the case study, making reference to the underlying principles and practices.

¹ This case study is based on an actual company; however, the company details have been substituted to ensure company confidentiality remains intact.

5.2 Method

The design led innovation process involves cycling between the current business and an idealized, future proposition that it could one day strive to achieve. However, before any change or transformation can even be considered, it is essential to have a clear picture of the business as it currently operates (*understanding*). The problem-solver(s) detail various aspects of the business: their purpose, strategy, customer, value proposition, ways of innovating, and so on. This serves the dual purpose of acting as an audit to gauge progress and, importantly, it alerts companies to new opportunities for growth. For instance, opportunities can arise by revealing new markets to be entered or through questioning whether strategy and customer needs are aligned.

In order to explore these new avenues for growth, the problem-solver needs to shift their thinking from the current business towards imagining an alternative future situation that they could one day provide. That is, they begin the process of developing a future business proposition based on (assumed) customer needs. The current business is completely cast aside and they are asked to consider the values and needs of a customer that is either completely outside their current market, or a current but extreme user. This opens up opportunities to explore different directions for meeting customer needs and, as a result, provides a completely new way of looking at the business (*envisaging*). To understand the possible problems and emotions of this future customer, a hypothetical journey in meeting their goals using the business is described, including the actions and possible emotions leading up to, during, and after contact with the business (*empathize*). Thus, again the problem-solver is provided with a completely new way of looking at their business; namely, from a future customer's perspective, and they should reframe the problems that they could solve for them accordingly.

Now that customer problems have been reframed, it is important to uncover the deeper reasons they could exist so that solutions can be designed accordingly (*proposition*). The problem-solver keeps asking themselves the deeper reasons why the problem could exist until they are satisfied they have uncovered a potential root cause. Thus, problems should be redefined as a customer emotion (often reflecting universal needs) as opposed to a functional description of the problem. Potential solutions to counteract these problems are then devised. These solutions are unlikely to already be in place in their current business, and might not actually be implemented in real life, but the idea is to imagine ideal possibilities to achieve a desired situation that later can be worked towards. These solutions are translated into new, ideal business models, customer journeys, and narratives that will be used to provoke discussion with real customers. Interviews with real customers (and potential customers) are performed in order to test the assumptions made regarding the real meanings behind their problems. Thematic analysis is used to uncover deeper customer needs outside of the problem context and reframe their problems accordingly (*provocation*).

Now that the deeper needs have been uncovered and validated with real customers, these insights can be used to deduce a desired and realistic value proposition to work towards (*re-design*). Customer personas and journey maps are updated to reflect the needs and values of real customers and solutions are detailed to meet their needs. The advantage of having been tested on real customers is that the solutions generated are customer-centric, and, importantly, provide a risk-mitigated means to align company strategy with customer needs.

Next begins the process of mapping the desired solutions back to the current situation to bridge the gap between the current business and its future value proposition. First, the current and ideal future states are compared to identify which activities need to be stopped, and which new activities need to be acquired in order to achieve the desired results (*connection*). Then, new products and services are developed that action the newly competitive business model, which aligns strategy with (validated) customer needs (*alignment*). In order to sustain changes long-term, the problem-solver should ensure that all members of staff are aware of, and acting in accordance with their company's new purpose and strategy. Staff should continue to implement their newly acquired skills and should show a lasting ability to continually reframe (*empowerment*).

Table 2 presents a step-by-step overview of this method that can be used as a checklist during projects.

5.3 Design Led Innovation Overview

Table 2. Design Led Innovation Overview

Step	Aims	Means	Criteria
Understanding	An assessment of the current business and its ways of innovating	Let senior leaders of the firm detail their current purpose, business model, customer personas, value proposition, and ways of innovating	Understanding should identify: - If strategy is aligned to their customer and business model - Any discrepancies across staff about customers, value propositions, and/or business models
Envisaging	An exploration of new possibilities beyond the current business	Describe possible future customers or extreme users	Envisaging should identify new customers and markets
Empathise	An understanding of the possible problems and emotions of a future customer	Describe the journey of a future customer in achieving their goals – detail touch points with the current product or service Include emotional aspects of journey	Empathise should: - Describe journey before, during, and after proposed/current product or service - Identify customer pain and gain points - Reframe problems
Proposition	A new value proposition based on the assumed needs of a future customer	Probe the deeper reasons the (reframed) problems exist from a customer perspective Create temporary solutions and convert into an ideal business model, customer journey, and narrative	Proposition should: - Redefine problems at an emotional level - Design out pain points and/or leverage gain points - Narrate problems and solutions from a customer perspective
Provocation	A description of the real meanings behind problems for customers	Conduct interviews with real customers using narratives to provoke discussion Use thematic analysis to uncover deeper customer needs	Provocation should: - Test if assumptions in narratives are true - Reveal meanings and values outside of the problem context - Reframe problems with more focus
Re-Design	A new ideal but realistic value proposition and business model that the company will consider	Use refined insights to update personas and create new value propositions and business models including enabling the solutions	Re-Design should create: - Customer-centric and ideal future-state value propositions - Risk-mitigated solutions
Connection	A new strategy to get towards desired state	Compare current (understand) and ideal future (re-design) states to propagate current strategy towards achieving desired states	Connection should produce business models that identify activities to be stopped, and new activities to be acquired
Alignment	An implementation of actual change	Develop new products/ services/ organisational structures and re-brand	Alignment should implement competitive business models
Empowerment	An assessment of organisational change and capability building	Train staff and administer follow-up mentoring	Empowerment should show capability of staff to continually reframe

6 DISCUSSION AND DIRECTIONS FOR FUTURE RESEARCH

In summary, we offered two design innovation methods, frame creation and design led innovation, particularly suitable for solving complex societal and business problems, respectively. We showed how frame creation involves an iterative process of zooming in and out between the immediate problem situation and the wider context. During the process, the immediate problem as it presents itself is analysed then pushed aside to consider the deeper values of stakeholders and players. Based on these values, existing situations where these themes are realised are used to create frames from which solution directions are worked back to the original problem. Design led innovation, on the other hand, involves an iterative process of cycling between the business as it currently operates and an alternative desirable situation it could strive to achieve. During the process, the current situation is considered then this is pushed aside and another possible situation the firm could offer is imagined. This new future is proposed to and tested with customers until an accurate representation of true needs

is obtained. Then, risk-mitigated solution directions are used to bridge the current towards the desired state.

While our two approaches are both applicable over a range of situations, in this paper we showed how frame creation is particularly suited to societal problems, and design led innovation is particularly suited to business problems. Because frame creation uses commonalities in underlying values and themes to generate alternative approaches to problems, it satisfies the needs of many different stakeholders simultaneously. Because design led innovation uses deep customer insights to link value propositions with strategy, it gives businesses competitive advantage by innovating across all levels of the business model. Thus, our methods are advantageous in that they provide broad systems approaches that are particularly problem-oriented rather than solution-focused.

Our description of our methods also enables us to begin the process of assessing/evaluating the effectiveness of design projects by means of their own methods. Specifically, in line with management literature, we attempted to link our objectives with action plans in terms of S.M.A.R.T. criteria (Doran, 1981). Our “aims” and “means” could be likened to S.M.A.R.T.’s “S” index; each one of our steps is defined in terms of a “specific” goal. And our evaluative “criteria” could reflect S.M.A.R.T.’s “M” index; our steps provide a “measurable” indicator of progress. This approach has already been suggested for managing the common design technique of framing (Vermaas, 2013) and we extended upon it in the current paper to describe the full spectrum of steps in both our frame creation and design led innovation methods. By articulating the methodological steps of projects in terms of their aims, means, and criteria, it is possible to evaluate if the goals of each step have been realised, and thus it can be determined if projects are successful or not. This is particularly beneficial in instances where substantial effects of innovation are not anticipated to arise until the long-term, and/or when attempting to communicate the value of design to a non-design audience who will inevitably require more concrete means by which to manage projects than what most traditional design methods currently permit. Both instances apply in the case of complex societal and business problems, for which our frame creation and design led innovation methods, respectively, are proposed. In our future research, we intend to operationalise the other remaining indices of S.M.A.R.T. (*assignable, realistic, and time-bound*). It is intended that other researchers can use this as a guide for describing the steps of their own existing methods. Thus, this paper acts as a crucial development towards establishing sound design innovation methodologies that can eventually be scaled up for large research programs and educational purposes.

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