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Applying Design Thinking Elsewhere: Organizational context matters

Frido SMULDERS[*a], Kees DORST[b] and Pieter VERMAAS[a]

[a] Delft University of Technology; [b] University of Technology Sydney

In this contribution design thinking is taken as a transfer of design methods from product development to other domains. It is argued that the success of this transfer depends on the organisational context offered to design thinking in these other domains. We describe the application of design methods in product development and in two new domains by what we have called the IDER model, where D refers to design and I, E and R to the organisational context. Then we show that characteristics of the contexts in the new domains may determine the success of applying design thinking in these domains. Finally we focus on the transitions among design and the other contextual elements as another source that can 'make or break' the success of applying design thinking. We support our arguments with two cases of design thinking: social design and business-innovation design.

Keywords: *Design thinking; product development; organizational context of design; boundary transitions*

[*] Corresponding author: **Frido Smulders** | e-mail: **f.e.h.m.smulders@tudelft.nl**

Introduction

The emergence of design thinking as a general approach to address problems presupposes that design methods can be applied in multiple domains different to its original domain of product development. By this presupposition design thinking is taken as a stand-alone approach that can straightforwardly be applied in new domains. Many current applications of design thinking follow this path and have led to promising and challenging propositions in social design and business (e.g., Brown, 2008 & 2009; Carlopio, 2009; Martin, 2009; Plattner, Meinel, & Leifer, 2009; Verganti, 2009). Future applications may however be less successful, and raising doubts about that presupposition that design thinking can be applied freely and unconditionally. In an earlier paper (Authors, 2014) we have argued that effective applications of design thinking can be supported by an understanding of its original organizational context in product development. This context has provided sufficient conditions for applying design thinking with a reasonable measure of success; hence its analysis provides insight how contexts in other domains can provide similar sufficient conditions (and perhaps necessary conditions) for applying design thinking. In this paper we extend our contextual analysis of designing by also focussing on the socio-interactive dimension of the handover of information between design and its organisational context. Through also understanding how designers are socially embedded within industrial product development and the product life cycle, design thinking can grow to truly become a stand-alone problem solving approach.

First, we introduce our contextual perspective on design thinking by describing two cases in which design techniques, tools and methods have been applied to address problems in other domains with varying success. In section 1 we describe how product development design tools are applied in the domain of social policy, again with varying success. In section 2 we show how design methods were used effectively in the realm of business innovation. Second, we describe our earlier argument by analysing the context of design in its original domain of product development. In section 3 we give the *IDER model* for capturing this context. This model represents the overall development of industrial products and product life cycles, and identifies its four core elements. Design is one of these elements, and the other three make up the context of the design activity. In section 4 we delve into the nature of the other three elements and in section 5 we focus intensively on the socio-interactive transitions between these elements. Third, we return in section 6 to our two cases of the application of design to other domains and analyse them from this contextual and transitional perspective. Section 7 contains overall conclusions for the further development and transfer of design thinking.

1. Design tools for social policy

Our first case concerns the use of design methods for improving life conditions in the Australian Indigenous communities. The protagonist is an industrial designer who since 1991 has been working as a consultant with NGO's and the Australian Government to improve Indigenous environmental health. Health in Australian Indigenous communities is poor and Indigenous Australians have a life expectancy that is about seventeen years less than that of 'mainstream' Australians (Australian Bureau of Statistics, 2010). Less than ten percent of 6000 households surveyed in Indigenous Australia have adequate facilities to store, prepare and cook food. About 71% of these households have electric cook-stoves (Department of Families, 2007).

During his involvement in the field, the designer regularly encountered anecdotal evidence about these electric cook-stoves poorly performing in Indigenous communities. Indeed, some stoves were reported to last no longer than 6 to 24 months – a very short time compared with the ten-year service life that consumers and the housing providers usually expect from this appliance. When he started investigating this issue most comments about this short lifespan were laying the blame with the users. Some typical examples were: "we should have programs that train 'them' how to use stoves"; "I wonder what 'they' are doing to them?"; "they don't know how to cook with a stove, 'they' like cooking on a fire" or (quite untrue, by the way) "they use the stoves to heat the houses but not for cooking food". It was obviously the user's fault that the stoves did not last (Tietz, 2009).

The designer set out to investigate what was really happening by undertaking a study of these stoves in two remote Indigenous locations. Instead of interviewing the users, the designer decided to 'interview' the stoves. Data loggers were installed in the consumer switchboard on the outside of the house to measure the current draw from the dedicated stove electrical circuit. The stove was logged every 3 minutes, an interval that should show even the shortest duration of use of an electric solid element domestic stove. The data was collected for about one year, and subsequent analysis of about 2 million data points showed that the stoves were used on average for about 3.5 hours per day, with peaks in some households of up to

6 hours per day. The manufacturer of this particular kind of stove, usually specified for public housing, is an international electric appliance corporation that, through a number of brands, virtually exclusively services this market segment. When they were approached with the data from the investigation, they divulged that the stove concerned is only designed to be used for a maximum of 50 minutes per day/five hours a week. This is enough to explain the short lifespan of the stoves within the Indigenous context (Tietz, 2009). Further investigation showed that the same stoves have been ordered and reordered by the various housing providers for years – no one deemed it necessary to investigate why the service life was so short; instead the users were blamed and more of the same stoves were installed. Moreover, it is a requirement to order from only a range of approved products from suppliers included on a preferred purchase list of the Australian Government. The ongoing expenses and costs associated with the constant reordering, reshipping and reinstalling of stoves seems to have gone unnoticed in a sector were cost reduction is often front page news.

The amount of stove usage that was uncovered in this study falls easily within the range of commercial cooking equipment. Commercial stove manufacturers approached with this data felt confident that their products are able to handle this kind of use. From a design perspective a solution therefore seemed to have been found. The problem with the poorly performing electric cook-stoves in Indigenous communities was uncovered to be related to specific user requirements and commercial stoves would meet these requirements. Moreover, it is arguable more economical to opt for this solution. The larger institutional organisation did however not allow adopting this design solution; given the Governmental requirement in Australia that only a range of approved products from preferred suppliers can be ordered for housing, commercial stoves could not be ordered.

In this case design methods were applied to a problem in the domain of social policy, and a sound technical solution found with these methods was blocked by institutional constraints. One may blame the irrationality of institutional arrangement for this failure of social design, yet one could also note that in this case the constraints the Australian Government imposes on purchasing equipment were not properly taken into account. On either reading the case of designing for Australian Indigenous stove usage is a case of unsuccessful application of design methods by the mismatch between the solutions that can be found by these design methods and the institutional possibilities.

2. Designing policies for industrial innovation

The first case provides evidence that domains other than product development do not automatically provide the right conditions for product design methods to be effective. Our second case is however a success story and concerns the use of design methods in the domain of industrial policy to strengthen the innovation capacities of companies.

During the 1970s awareness was growing in the Netherlands that industry had to change its innovation strategies from maximising production capacities based on technology push to strategies that aimed at market pull. The Dutch Ministry of Economic Affairs decided that especially medium-sized companies were in need of support to make this transition possible, and a project called *Project Industrial Innovation* (Pii) was initiated in the late 1970s aiming at improving the innovative capacity of those companies. The project was commissioned to a task force within the Netherlands Organization of Applied Research (TNO), and project leader became Jan Buijs, a university trained industrial design engineer. The vision of the Pii project was to enrich the target companies with a sustainable innovative capacity, that is, to help them not by just once developing a new innovative strategy, but by implementing in the companies a structured thinking process that could serve repetitive cycles of new business searches and developments.

This structured thinking process, which is now known under the name *Delft Innovation Method* (Buijs, 2003; 2012), contains design methods and tools. Yet the Pii project serves in this paper as our second case not because it promoted the use of design methods to its target companies, but because Buijs and colleagues used design methods and tools to develop the Delft Innovative Method itself. For finding the right solution to the task of improving the innovative capacity of medium-sized companies, the task force used divergent thinking to scan various bodies of literature, and then investigated the literature of strategic management, creative problem solving and design methodology in more detail. They used integrative thinking to bring elements from this literature together into a coherent conceptual method. And they engaged in prototyping, to test their ideas and identify possibilities to improve on them. The result was a structured process built up with elements from strategic management, creative problem solving and design methodology, and aimed at the identification of promising new business ideas. The Delft Innovation Method was finally validated by the task force in test runs with a few pilot companies before the methods was actual implemented nationally.

The means for implementing the Delft Innovation Method were moreover deliberately engineered in the Pii project. For addressing a first tranche of about 70 target companies the task force scaled up the necessary capacity for implementation. Since this capacity was only needed for the duration of the project, they decided to work with a network of consulting groups and individual management consultants. For preparing these consultants for their task a special training program was developed for making them familiar with the Delft Innovation Method and its underpinning theories, and for enabling the consultants to teach the relevant skills in the area of creativity. Inside the target companies the consultants trained innovation teams through series of concentric design/learning cycles until the new business concept was concrete enough for the company to start a regular product development project. These teams were, as in design, multi-disciplinary and consisted of employees from the disciplines that potentially are affected by the innovation activities: top management, marketing and sales, production and product development.

The Delft Innovation Method was eventually successfully transferred to about 140 companies. This success could not only be measured with initial rates of new product introductions by the participating companies, but also with rates by which these companies introduced new products on the market thereafter (Buijs, 1987). The method has proved its value over the last thirty years and is still being taught to thousands of professional and academic bachelor students in industrial design in the Netherlands. Also, the different consultants involved in the Pii project kept using the Delft Innovation Method in their respective practices. This final case shows that it is possible to successfully apply design thinking in new domain, in this case the domain of industrial policy. Before we address the underlying success factors, we return to product development to describe its original context.

3. Design methods for product development

For further analysing the success and struggle in the two cases, we return to product development for describing the original context in which design methods are successful. This context is the development of industrial product life cycles, and our tool for capturing it is an abstracted model which we have called the *IDER model* (Authors, 2014), and in which product life cycle development is divided into four elements:

- *I* = Initiating a new product life cycle

- *D* = Designing concepts for the product
- *E* = Engineering the product and the process
- *R* = Realising the product life cycle

The first element *I* of *initiation* typically associates with the front end of product development. During initiation the focus is on the search for a new product life cycle by, for instance, market research. But initiation can also focus on the creation of ideas for the replacement of existing technologies embedded in present products by new technologies to create better performance. The second element *D* of *design* concerns the development of concepts of the new product life cycle, and this element is product development proper. The third element *E* covers the *engineering* and embodiment of the artefact and the associated development of the necessary manufacturing processes and tools. This includes the application of mathematical principles and natural laws with judgement to develop the artefact and its production system. Engineering aims to validate and consolidate what comes out of the *D* element and to prepare that content for implementation in the *R* element. The fourth *realisation* element *R* aims at inserting ‘life’ in the value chain, that is, ramping up all activities associated with, e.g., purchasing, production, sales and use of the new product. This element covers the full product life cycle from market entry till end of life. The four elements in the IDER model can be seen as sequentially dependent: there is no *D* without an *I*, no *E* without *D* and no *R* without *E*. One may consider the elements as cyclic, since there is typically no initiation *I* without a present realisation *R* – the search for new ideas is done in the domain of the present world with its present products. In practice, however, the sequence of activities will be less ordered and more iterative, the point remaining that the context of design methods and tools that are used in design *D*, consists of the initiation *I* and engineering *E* of product life cycles, and to a less degree, the realisation *R* of these cycles. The *D* element in the IDER model of product development is the element in which designing takes place, and it represents the traditional object of research by design researchers, leading to models and methods for design.

The IDER model puts design thinking and its methods and tools for product development in their context, and emphasises the need to consider the whole life cycle when developing a new product. This context of design is regularly neglected: design researchers dominantly focused on design practices that concern finding concepts of products as solutions to design problems. Moreover, when we realise that product development often concerns the redesigning of existing products, the industrial product-life-cycle-development context is typically implicit/ already given. In this case the context does not need to be created, but merely to be adjusted for realising the life cycle of the upgraded product. Hence, product development as redesigning focuses primarily on the creation of the upgraded product.

However, for innovative product development this exclusive emphasis on the product is insufficient. Developing the four elements of the product life cycle becomes a different and more involved task. Initiating such more innovative development implies taking distance from existing products and its related knowledge base regarding the transitions among the elements. In design research some attention has been given to the transitions between them, and in the next two sections we concentrate on the findings of this research. In the final part of this paper we then return to the application of design thinking in domains different to product life cycle development.

4. Product life cycle development

To fully capture the development of new products one needs to create an understanding of all four elements of the IDER model, including the relations between these elements from a content perspective. This section discusses the literature on these subjects. The next section will focus on the relatively neglected transitions between the four elements from a socio-interactive perspective where knowledge and skills being handed over between different groups of actors within or between organisations.

The individual IDER elements

In the design literature the focus is often on design methods and tools, which leads to an understanding of (only) the *D* element of design. The element *I* of initiation is described in some detail in the (fuzzy) front end of innovation literature (De Brentani & Reid, 2012; Koen et al., 2001; Reid & De Brentani, 2004; Smith & Reinertsen, 1998). Literature on engineering *E* is often focused on particular fields of application, e.g., buildings, airplanes, dykes or ships. This object-dedicated stream of literature, initiated some 150 years ago in England and Germany, converts general engineering rules to dedicated rules belonging to the artefacts in a particular field of application, like airplane design, (Torenbeek, 1982), ship design (e.g., Evans, 1959; Watson, 1998), et cetera. Application of these rules is typically a validating and consolidating process that forms a solid base under the new artefact. Operational research (Chen, 2010; Luss, 1982; Simon & Newell, 1958) sheds some light on the realisation element *R*, but more research is needed to deepen our understanding of the *R* element for more innovative product development.

The literature concerning product innovation either concentrates on the *I, D* and *E* elements with the goal of bringing a first product onto the market as quickly as possible (known as time-to-market studies) or on issues related to the *R* element, known as diffusion studies and operational efficiency and operational excellence studies. The literature focusing on the time-to-market of a new product presents tools to speed up the processes within the *D* and *E* elements, (e.g., Cohen et al., 1996; Eling et al., 2013; Langerak & Hultink, 2005; Langerak & Hultink, 2008). The literature on the quick dispersion of products in the market, known as market introduction and product diffusion studies (e.g., Hultink, 1997; Hultink & Atuahene-Gima, 2000; Linton, 2002; Rogers, 1976) must be placed within the *R* element since these studies typically do not include any of the *E* activities. Also the incremental improvements of the operational chain belong to *R* and are found in literature under methods and tools like quality circles, Kaizen, Six Sigma, et cetera (e.g., Bañuelas & Antony, 2003).

The transition of content between the IDER elements

There is not that much literature focusing on the transitions between the elements in the IDER model. Formulating the design brief can be seen as the transition from the *I* element to the *D* element. Unfortunately, the literature on this subject is often weak and anecdotal. There is older literature that shows that the brief forms an important transitional function if formulated properly (Walsh et al., 1992). Some evidence indicates that design briefs are more misleading than leading as transitional documents (Herbruck & Umack, 1997). Other literature focuses on the design brief in the situation of outsourcing design by small firms without proper design resources (Berends et al., 2011; Lewis & Brown, 1999). Literature on the front end of innovation mentions the information flows at the project interface, the interface where the idea enters the formal stages of new product development and where development teams gets aligned (De Brentani & Reid, 2012). These authors mention the hypothetical role of ‘project brokers’ that typically integrate new (product) ideas with the “ongoing strategy and projects of the firm” (p 81). From this perspective, project brokers might act as boundary spanners between the *I* element and the *D* element. How these information flows actually take place from initiation to design is not clear.

The transition from *D* to *E* is not explicitly addressed in the literature either, which may be explained by the observation that design and engineering activities typically take place within a single department in companies. However, there is considerable literature addressing the *E* to *R* transition. This literature discusses how demands related to downstream *R* processes can be incorporated in the upstream development activities in the *E* and *D* elements of product life cycle development. For instance, design and engineering strategies named *design for manufacturing* (DFM) and *design for assembly* (DFA), and others like DFX (e.g., Pugh, 1991; Ulrich & Eppinger, 1995; Wheelwright & Clark, 1992) are aimed at incorporating in the *D* and *E* elements criteria that are related to the producibility of new products in the *R* element. This holds also for design and engineering strategies like *user centred design* (e.g., Norman, 2002; Stanton & Young, 2003), *design for maintenance* (e.g., Desai & Mital, 2006; Ivory et al., 2003; Pahl et al., 2007), *ecodesign* (e.g., Bovea & Pérez-Belis, 2012; Van Hemel, 1998) and *design for recycling* (e.g., Gaustad et al., 2010; Pahl et al., 2007). The use and maintenance of products, their disassembly or re-use of products fall within the *R* element, and the latter strategies are meant to control these ingredients of *R*. The essence of all these DFX strategies is that they aim to make the transition from the *D* and *E* elements to the *R* element as smooth as possible, and to limit the amount of iterations across these transitions. In other words, once the development process of a product life cycle has arrived in the *R* element, then iterating back to the *E* element is unwanted and often costly. The literature addressing the late engineering changes that result from such iterations shows that they are quite common. The news of frequent recalls of products that are already on the market and in use (by, for instance, well-known car manufacturers) underscore this observation.

5. The socio-interactive transition between the *IDER*-elements

The literature discussed so far addresses these transitions between the elements of the IDER model mainly from a content point of view, that is, by focussing on the content related to the product under development. On the organisational level we find the *Design Manufacturing Integration* (DMI) literature that helps to bridge the transitions between the elements. This literature concentrates on structural integration and coordination mechanisms, like cross-functional teams, co-location, et cetera (Adler, 1995;

Liker et al., 1999; Nihtilä, 1999; Rusinko, 1999; Vandervelde & Van Dierdonck, 2003; Vasconcellos, 1994). The main objective of applying these structural mechanisms is to secure an efficient handover and handling of this content.

On a deeper level of analysis, and additional to the above, one finds the socio-interactive perspective that deals with handing over results by actors from one element to the other. Such a perspective is needed especially in the case of the involvement of multiple groups of different actors each working within the confines of his/her own element. In product innovation there are many boundaries to cross that typically includes the transition of knowledge between different groups of actors. In companies this transition involves for instance a transition from actors in one department to actors in another: design engineers within research and development (within R&D departments, or similar) hand over knowledge and skills to people representing the operational chain like production and assembly workers (within Manufacturing or Operations departments). A socio-interactive perspective on this transition for determining what happens between the participants of these different processes as well as the design content during this transition is sorely needed.

Research on the socio-interactive transition across these boundaries is still scarce, yet growing. For instance Carlile (2002; 2004) addresses this issue within innovation processes from a knowledge management perspective. He presents a framework that describes three boundary-crossing approaches that each match with an increased complexity and novelty of the boundary between specialised domains. (1) A syntactic approach is for boundaries with shared and stable syntax that facilitates the exchange of explicit knowledge. When boundaries become a bit more complex a common syntax is not enough and differences in interpretation require a semantic approach (2) that aims to enable the move of knowledge stemming from different 'thought worlds' (Dougherty, 1992). The semantic approach helps to bridge the differences. Finally, a pragmatic approach (3) to boundary spanning brings knowledge embedded in local practices into the equation. Carlile (2004) suggests that the more practices are apart from each other the more difficult it becomes to hand over embedded and tacit knowledge to each other. Knowledge within a practice is "at stake" when accommodating new knowledge from another practice, especially if the existing knowledge is based on hard-won lessons over the years. The use of boundary objects in all kinds of forms (drawings, sketches, models, prototypes, et cetera) are believed to help creating a boundary spanning infrastructure that supports the transformation of knowledge in such a way that the receiving party is able to absorb this.

In addition to the knowledge perspective on boundaries, a transitional perspective completes the present state of knowledge regarding the socio-interactive description of the boundaries among the IDER elements. These transitions are taken as social processes among the different groups of actors involved in product life cycle development, as they take place over time. In the literature this socio-interactive perspective on the transitions between the elements of the IDER elements is taken up in (Smulders, 2006; 2007). In this work it is argued that transitions among elements are not just a matter of knowledge handover but also a matter of changing the practices within the respective IDER elements. The observation by Smulders (2006) is that the product innovation process within element *R* ends not only with the creation of the tangible product, but also with a new or changed socio-technical system. It is this socio-technical system, consisting of organisational routines (e.g., Feldman & Pentland, 2003) and supportive tangible and intangible artefacts (machines, procedures, moulds, production line layout, et cetera) in a performing state that produces the product. Although all participants focus on the realisation of the artefact, the social system has to change in a parallel process.

However, it is not only the socio-technical system in the *R* element that is important here; when considering the transitions also the qualities of existing socio-technical practices within each of the IDER elements needs to be taken into account. Especially the absorptive capacity (e.g., Cohen & Levinthal, 1990; Zahra & George, 2002) of these practices plays a crucial role in the success of the transitions among the elements. Absorptive capacity of an organisation (or part thereof) is defined as the ability to acquire, assimilate, transform and exploit new knowledge (Zahra & George, 2002). If the absorptive capacity within element ‘n’ is too low to internalise and work with new knowledge coming from element ‘n-1’, then the innovation process comes to a halt and never reaches the *R* element. In other words, the socially embedded organisational routines of any IDER element must be capable of handling whatever comes out of element ‘n-1’ and handover its results to element ‘n+1’. If not, the transformation of knowledge from ideas (*I*) to concepts (*D*) to drawings (*E*) to routines (*R*) when handed over from one actor group to another over the totality of IDER elements will be jeopardised.

This observation raises questions as to what happens if there are no heuristics regarding the transformations between the elements of the IDER model. Or what happens if there is no existing socio-technical system in place, like in the case of a new venture, or in the case that the artefact is so different that a totally new socio-technical system is needed to realise it. And how to proceed from *D* by *E* to *R* if there is no easily understandable tangible element that could form the central focus of the process, like in a service industry? In the next section we return to our two cases in which design is applied in other domains than product development, and discuss their success and failures using the IDER model.

6. Discussion

The position we argue for in this paper is that the properties of the organizational context matters when design thinking is transferred from product development to other domains. Especially, for a successful transfer of design thinking the boundary spanning capabilities among the elements are of prime importance for securing the transitions across the IDER-elements. Let us briefly revise the two cases discussed in this paper.

Our case of improving by design the life conditions of Australian Indigenous communities may be seen as one in which primarily the *D* element was transferred from product development to social policy development in the institutional setting of the Australian Government. Yet in this transfer it was not taken into account whether that institutional setting provided the boundaries and boundary transitions among the IDER elements in the same way as product development does. The designer incorrectly assumed that the *E* and *R* elements of the Australian Government had the capabilities to adopt his solution. It seemed so simple, just purchase another stove and install it in the outback. Yet, this proved not at all that simple and the process of innovating through design methods came to a halt because of two things. First, the routines within the practices of the designer and these within *E* and *R* elements of the Australian Government were too far apart to be bridged. Second, the absorptive capacity of the *E* element within the governmental organisation proved to be too low to accommodate the results from the *D* element (even though the proposed solution would make economic sense).

Apart from obvious solutions of making adjustments to the *E* and *R*, an ideal solution would have been to focus on the activities performed in the *I* element. Within the *I* element not only the *D* activities should be initiated, but the totality of IDER activities should be taken into account including the future socio-interactive transitions among the subsequent *D*, *E* and *R* elements.

Our second case, the example of the Pii project shows that the transfer of design thinking to a domain different to product development can be successful. In terms of the IDER model this success can be analysed as due to a well-orchestrated social transfer of the different elements to the new domain. The initiation element *I* to create sustainable innovation capacity in medium-sized companies was located in the Dutch Ministry of Economic Affairs. The design element *D* of developing this capacity was carried out by the task force within the Netherlands Organization of Applied Research (TNO). The content and socio-interactive transitions from the *I* to *D* elements were secured because the available organisational routines of the task force were adequate to design, engineer and realise a new innovation method. This task force was used to design approaches to support companies in their search for new business opportunities and subsequently apply that to the specifics of their clientele. This meant they already possessed most of the required organisational routines for the *D, E* and *R* stages including the transition between the IDER elements.

The task force developed the Delft Innovation Method in the *D* element to realise the sustainable innovation capacity in medium-sized companies, and the task force developed an implementation plan for delivering this method to the companies. This implementation involved a group of external consultants who were to bring the Delft Innovation Method to the target companies. The *E* and *R* elements thus involved yet another group and the content and socio-interactive transition from *D* to *E* and *R* was in turn secured. The external consultants had the organisational routines to support companies, and the task force trained the consultants for their assignments. This training not only focussed on introducing the Delft Innovation Method to the external consultants, but also on the subsequent development of consulting routines to bring the method to the medium-sized companies. This training of the consultants ensured that the socio-technical system as envisioned by the task force was put into place. Finally the task force held regular coaching meetings among the external consultants. By doing this, the similarity of practices ensured a strong transition of knowledge over the boundary between the task force and consultant.

7. Conclusions

Design thinking originated in the design techniques, tools and methods as used in industrial product development, and design thinking is now transferred as a general problem solving approach in many domains beyond product development. We have shown in this paper that the application of design thinking in other domains than product development need not always lead to the successes expected. We argued that this may be explained by comparing the organizational context of design in product development with the contexts for design in the other domains. Two cases were considered. In our first case of social design, we could explain the initial lack of success of the application of design *D* by the flawed assumption that the domain of social policy could provide a structural similar context to social design as the context of product development does to product design. This assumption proved to be wrong. This then led to solutions that could not be embraced and realised by the organizational context. The required capacity to absorb the results from the *D* element was not sufficiently in place. Our second case of design for industrial innovation showed that when in a new domain a context for design is created where the boundary transitions are secured in a similar way as in its original context, success could be achieved.

For giving this argument we represented the context of design in product development with the IDER model. In this model design in an element *D* that is preceded by the *I* element of initiating a new product life cycle and succeeded by the *E* and *R* elements of engineering and of realising the new product life cycle. We surveyed the literature on the four elements of the IDER model and paid considerable attention to the (socio-interactive) transitions between these elements.

The lesson to be drawn from our analyses is that organizational context matters when design thinking is transferred from product development to other domains. In order to transfer design methods *D* to other domains, one needs to assess in these other domains if the right capabilities are available to realise the outcomes that may be created by design techniques, tools and methods. A short-sighted application of design thinking in other domains may lead to disappointing results.

When transferring design thinking, one has to look at the organizational context in the new domain of application and see if it will enable design in the same way that the context of product development enables product design. For achieving this match, the context in the new domain may need to be adjusted in such a way that the transitions to the other elements are secured and that the capabilities of the respective elements are assumed to be sufficient for further elaboration. Adjustments need to be realised while initiating (*I*) the application of design thinking in its new context. It must be realised that these adjustments are not just limited to its new context, but equally may put requirements on to the application of design thinking *D* itself. What is contented here, that while considering the application of design thinking in any new domain, one need to assess the full span of the IDER elements and devise the necessary adjustments during the initiation process. In fact, one needs to go through a mini IDER-cycle preceding the application of design thinking elsewhere.

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