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Towards a dynamic mode of design management and beyond

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In 1965, the need for design management as project management was voiced at a time when new forms of consumerism became affordable for the masses. However, in an environment of disruptive change, in which „age of less" consumption is propagated, when digital technologies allow for new business models and distribution channels without intermediaries, design as a company resource can also become „sticky". Today, firms have to continuously absorb new knowledge and quickly socialise it throughout the company. Design management may need to lead the way towards more dynamic ways of doing business. Furthermore, design management may have to venture strongly into the entrepreneurial side of business, recognizing, evaluating, and exploiting new business opportunities. This conceptual paper will look at three different modes of design management: simple design management or the management of design activities within organisations; integrated design management or the coordination of all relevant design activities within a firm across all company levels; and dynamic design management, which builds on the dynamic capability concept. In addition, this paper will raise the question of whether there should be a fourth mode, building on the basics of entrepreneurship, called "entrepreneurial design management".

***Keywords**: Simple, integrated, dynamic, entrepreneurial modes of design management, disruption*

Introduction

Almost 50 years ago, Michael Farr (1965) coined the first definition of design management as „the function of defining a design problem, finding the most suitable designer, and making it possible for him to solve it on time and within a budget" (p. 38). This rather pragmatic and simple statement of design management as design project management was written at a time when new forms of consumerism became affordable for the masses (Gorb, 1990). Further on in the text, Farr (1965) elaborates on companies needing design management to differentiate products and brands through more sophisticated value propositions. Since then, design management has become a tool to introduce design into the strategies, brands, identities, environments, and product/service development processes of companies, evolving into a fully integrated management „agenda" responsible for the orchestration of experiences of their customers (Cooper & Press, 1995).
More recently, design and design management have been recognised as drivers of organisational change (Junginger, 2008, 2009)—for example, by building new organisational capabilities in NPD (Danneels, 2002). In the early 2000s, Design Thinking (Brown, 2008, 2009) entered the field of (design) management with a similar proposition, at a time when innovation was the new battle cry (Johannson-Sköldberg & Woodilla, 2011, 2013). By then, design management had definitely escaped Taylorist concepts of scientific management to become a resource in its own right in the Resource-Based-View sense of the word (Borja de Mozota, 2003, 2011).
However, in an environment of disruptive change, in which more than 50 years of consumerism are being questioned and the „age of less" (Bosshard, 2011) is widely propagated, when digital technologies allow for distribution channels without intermediaries (Ball, 2012) and for new business models (Osterwalder & Pigneur, 2010), design as a resource can also become „sticky" (Teece, Pisano, & Shuen, 1997), meaning that it is not offering a solution to imminent changes and threats from the environment. Today, companies have to develop the capability to continuously absorb new knowledge (Cohen & Levinthal, 1990; Zahra & George, 2002), to quickly socialise it throughout the firm, and to lead the way towards more dynamic ways of doing business.
This capability might include a repertoire of processes, tools, and mindsets to drive and support change as a core organisational capability.
Furthermore, in the future, design management may have to venture more boldly than before into the entrepreneurial side of business, recognizing,

evaluating, and exploiting new business opportunities (Shane & Venkataraman, 2000) as well as effectuating them (Sarasvathy, 2008).
This conceptual paper will look at three different modes of design management that have developed over the years: *simple design management* or the management of design activities within organisations; *integrated design management* or the coordination of all relevant design activities within a firm across all company levels, functions, and touchpoints; and *dynamic design management*, which builds on the dynamic capability concept (Helfat et al., 2007; Zahra & George, 2002), aiming at strategic flexibility (as an internal result) as well as competitive advantage (as an external result).
In addition, this paper will raise the question of whether, in the face of disruption, there should be a fourth mode of design management, building on the basics of entrepreneurship–*entrepreneurial design management* (working title)–to accommodate the need to create fully ambidextrous or even new companies (Tushman & O'Reilly, 1996; Christensen, 1997). We will explore this fourth mode in more depth to understand how it fits with the three modes mentioned above. The paper will then discuss the strengths and weaknesses of the four modes in the face of disruption and concludes with an outlook on a future research direction.

(At least) the modes of design management

On the journey from the lesser to greater significance of design as briefly outlined in the introduction, three modes of design management can be distinguished with regard to their strategic contribution and direction. Adapting Gorb and Dumas' (1989) notion of silent design, even a (non-) mode can be identified, named silent design management or non-existing design management.[1] However, in this paper we will focus on those modes that are based on a minimal awareness of the usefulness of design and design management to achieve company goals. These modes have been extracted from a more extended review of the design management literature (Acklin, 2013a) but here, due to limited space, only the essential insights are summarised. These three modes are:

- simple design management

[1] Companies using, or rather, not using this kind of design management are unaware that they are making strategic decisions in e.g. engineering design or marketing. Interestingly enough, design and design management have to accept that this process also "seems to work" (Gorb, 1990, p. 75).

- integrated design management
- dynamic design management.

Simple design management

The first mode is called *simple or basic design management*. Companies adopting simple design management are interested in managing their processes more effectively and are mainly applying design (project) management to design projects as part of, for instance, new product development or corporate design activities. Representative theorists of this (early) concept of design management are Farr (1965) and, to some extent, Topalian (1979). The latter made the point that British manufacturers would be able to escape the mediocrity of their products if design projects and new product development were managed more effectively and efficiently. In the sixties, marketing and branding had introduced a fundamental shift in the way a company presented itself and its products/services to its customers. To illustrate, Farr offered the example of a supplier of ironed shirts who was no longer selling a laundry service but pride in appearance (Farr, 1965). In addition, design had grown more specialised and the training of designers more diverse and profound, which made it a challenge for management to pick the right designer for the right job. Farr's (1965) rationale was already a move away from the concept of unity of all elements of visual appearance achieved by a single "enlightened" architect/designer as in companies such as AEG or Olivetti (Bürdeck, 2005) to responding to companies' more strategic preoccupations.

Integrated design management

The second mode, *integrated design management*, coordinates and deploys design in all departments, functions, and processes necessary to create a coherent customer experience and company positioning. Cooper et al. (2009) characterise this mode of design management as follows:

> *Design Management is the on-going management – and leadership – of design organisations, design processes, and designed outcomes (which include products, services, communications, environments and interactions). (p. 50)*

This design management mode is called "integrated" because there is extensive alignment, communication, education, and even mediation to be done between conflicting forces before design can fully unfold its power as a value creator at each touchpoint of the company. This includes the integration of design at each organisational level, the presence of (visionary)

design leadership (Turner & Topalian, 2002), and a design management function at the operational level. It further entails the coordination of processes that include design in corporate design, brand design, new product development processes, and so on, together with the ongoing effort to align design outcomes at each touchpoint, and to infuse design thinking in the company (Dumas & Mintzberg, 1989). The visual representation of an integrated design management model (Acklin, 2011,[2] 2013) displayed below (Fig. 1) is itself an integration of the thoughts of several authors (Best, 2006; Turner & Topalian, 2002; Cooper & Press, 1995; Bruce & Bessant, 2002; Dumas & Mintzberg, 1989; Cooper, Junginger & Lockwood, 2009).

[2] Published in the handbook of the BA Design Management, International course at Lucerne University of Applied Sciences and Art – Art & Design as a further development of the Lucerne Design Management Model (Acklin, 2009).

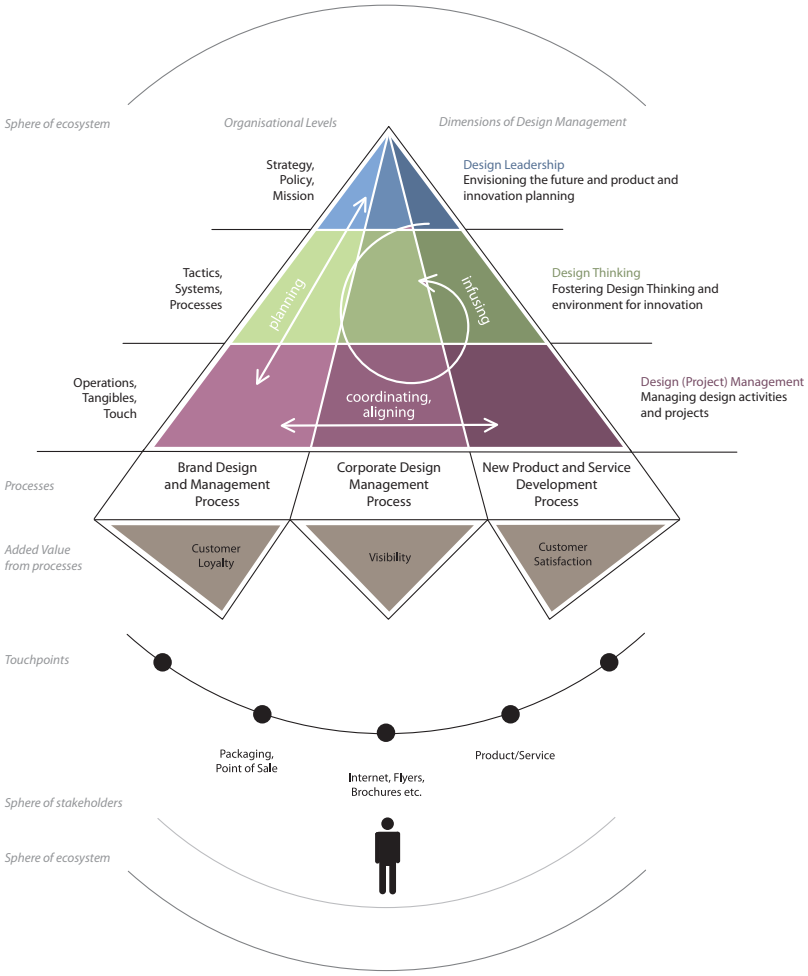

Figure 1: Integrated Design Management Model (Acklin, 2011)

Dynamic design management

Although design has been understood as a (core) competence of the firm (Borja de Mozota, 2011), design as a resource can also become „sticky“ (Teece, Pisano, & Shuen, 1997); “… at least in the short run, firms are to

some degree stuck with what they have and may have to live with what they lack "(p. 514).[3] Authors such as Christensen (1997) or Tushman and O'Reilly (1996) have observed that successful companies might even end up with an innovator's dilemma of not wanting to risk their own core business through innovations of a more disruptive order emerging in the environment.[4]
These situations call for a third form of design management, the *dynamic design management* mode, in which companies absorb and exploit new knowledge and resources in order to avoid the "stickiness-trap". Zahra and George (2002) proposed that the capability to continuously absorb new knowledge is "a dynamic capability pertaining to knowledge creation and utilization that enhances a firm's ability to gain and sustain a competitive advantage" (p. 185). This absorption takes place in discrete steps of acquisition, assimilation, transformation, and exploitation (see Fig. 2). Danneels (2002), who researched the product development processes of five companies through the lens of the dynamic capability concept, comes to this conclusion:

> *My analysis of new products as interconnected through their reciprocal relationships with the firm's competences yields a view of firms as portfolios of competences, rather than of portfolio of products. (p. 23)*

So, *dynamic design management* is concerned with the development of (new) knowledge, (new) design competences, and capabilities rather than project management of design projects. A process of product development, innovation, or even marketing can become "an engine of renewal" (Bowen et al. 1994; cf. Danneels, 2002) building and expanding organisational competences over time. These processes might even trigger a change in an organisation's market domain.
In a *dynamic mode*, design managers are able to decouple and recouple, or to reconfigure a company's design resources to match dynamically changing environmental needs. They actively deploy design knowledge at specific pain points of the company instead of coordinating design as a company resource throughout each company touchpoint. By proactively "reshuffling" core competences, a company has a quicker and less risky way to grow and

[3] We might be witnessing the beginning of this effect in the case of Apple, the powerhouse of design; at this point in time, other companies are offering more functionality along with an equivalent amount of design.
[4] One of the late casualties of the innovator's dilemma is Kodak, which invented the digital photography but failed to exploit it.

to renew itself. A dynamic mode of design management might be visualised as follows (Fig. 2).[5]

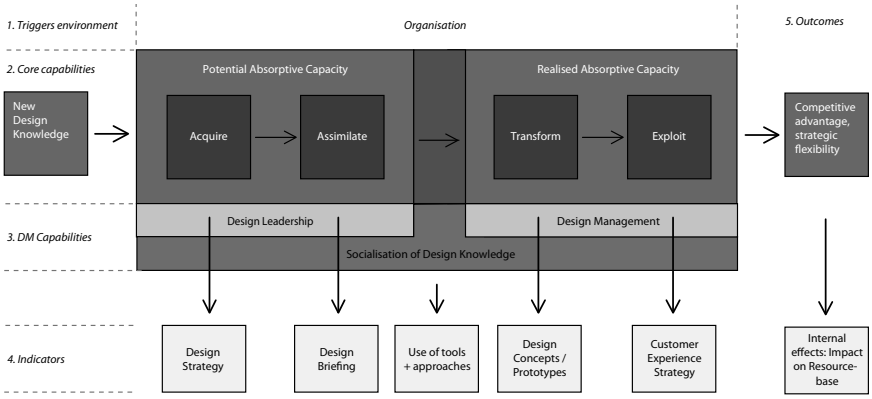

Figure 2: Design Management Absorption Model (Acklin, 2013b)

Towards a fourth, entrepreneurial[6] mode

Schumpeter (1934, 1942) describes the process of *creative destruction* as the central fact of capitalism: "It is what capitalism consists in and what every capitalist concern has got to live in" (Schumpeter, 1942, p. 83). He singles out the entrepreneur as the one actor who captures value in changing environments by exploiting the following elements: new consumer goods, new methods of production or transportation, new markets, or new forms of industrial organisation. Since the nineties, Schumpeter has been received as one of the quintessential authors on innovation, but it is always entrepreneurship that he is talking about.

To date, the entrepreneurial dimension of design has often been subsumed in what designers do but has rarely been acknowledged as an inherent component of design. One reason for this phenomenon might be that designers' perspective and approaches complement the entrepreneurial

[5] The first author of this article has published several papers on the relationship between design absorption and the dynamic capability construct. Please refer to list of references (Acklin, 2011a,b, 2013a, b, c) for more information.

[6] Through a policy Delphi, Gartner (1990) established that there is no singular definition of entrepreneurship, discovering "themes" of entrepreneurship such as the unique personality of the entrepreneur, innovation, organisation creation, value creation, company growth, individuals as owner-managers, and profit and non-profit contexts.

expertise of companies—without actively driving it—by creating new artefacts, services, and experiences. So the risk-taking is mostly on the entrepreneur's side of the working relationship, even though designers often share the risk when they are paid through royalties on products sold. In addition, designers' entrepreneurial contribution to companies during the process of opportunity recognition, evaluation and exploitation (Shane & Venkataraman, 2000) is also poorly conceptualised within current entrepreneurship research and theory, as well as in design studies.
Here, we will propose a fourth mode—an entrepreneurial mode of design management—by exploring *the overlap* of entrepreneurship with design and design management. This is offered as a point of departure for a broader discussion that would have to follow. Design management has the capability to take on a more active role in companies in respect of entrepreneurial issues in companies as well in new venture creation.

Overlaps of design, design management and entrepreneurship

As mentioned before, Schumpeter (1934) introduced the notion of creative destruction, in which different actors disrupt markets and introduce new combinations of, for instance, products or production methods. It follows that the recognition of opportunities and the creation of new artefacts, which possibly alter prevailing market logics and might eventually lead to "better world", lie at the heart of entrepreneurship (Schumpeter, 1934; Shane & Venkataraman, 2000). Dealing with uncertainty and being highly tolerant of ambiguity is another characteristic of entrepreneurs (e.g. Sexton & Bowman, 1985).
In all of these regards, entrepreneurial and design mindsets resemble each other, in their ambition to create something new and better or in their tolerance of uncertainty and ambiguity. Design even deliberately exposes itself to uncertainty by keeping processes of exploration fluid until the best solution (rather than just another solution) emerges (Boland Jr. & Collopy, 2004).
Furthermore, the discourses of design theory (Johansson et al., 2011) overlap at several points with entrepreneurial discourses—although not completely uncontested, as we will see. Among the concepts shared by design studies and entrepreneurial theory are Herbert Simon's "science of the artificial" (Simon, H., 1969) and Donald Schön's concept of "reflection-in-action" (Sarasvathy, 2008). As in a science of the artificial, entrepreneurial actions are directed towards what ought to be rather than towards what is. Venkataraman, Sarasvathy, Dew, and Forster (2012) are of the opinion that opportunities are enacted, imagined, or created. However, some scholars of

entrepreneur research take on a positivist/realist stance, asserting that opportunities exist independent of the entrepreneur, and that it takes "alertness" to discover them as they represent market deficiencies (Kirzner, 1973). Needless to say, design and design management are more aligned with the first position, even though the discussion is redundant to some extent because alertness may also very well be a requirement for creation. The overlap between design theory and Sarasvathy's (2008) concept of "effectuation" is even more obvious: the iterative process of making things real and tangible is close to the process of effectuation—acting on opportunities and exploiting them step-by-step in a continuous process of learning and developing. However, the concept of "effectuation" is also challenged by the concept of "causation", which implies that the way to success is the deployment of specific means and tools such as business and financial planning (Fueglistaller, Müller, Müller, & Vollery, 2012) after a business opportunity has been discovered (e.g. through "alertness", Kirzner, 1973).

With these overlaps in mind, we will now compare in more detail the entrepreneurial process of opportunity recognition, evaluation, and exploitation (Shane & Venkataraman, 2000) with design and design management approaches.

Opportunity recognition and creation

A designer's ability to monitor the environment brings forth new entrepreneurial opportunities, creating new offerings as a result.[7] At an early stage of the design process, designers use various approaches that include intuition, investigation of user needs explored through empathy or experiential methods ("putting oneself in the shoes of the user"), ethnography, observation of trends, or following personal interests (Sanders, 2006) to discover opportunities for new offerings. Furthermore, the awareness of new materials and technologies from other contexts (Hargadon & Sutton, 1997) or the adaptation and combination of existing technology to create smart, user-friendly and attractive value propositions (Pannozzo, 2007) are typical design (entrepreneurial) activities at this stage. Entrepreneurs are also alert to new information of relevance to the identification of opportunities (Kirzner, 1973; Kirzner, 1979). Some of their approaches focus on systematic search—the deliberate gathering of new information from the most promising information channels (Fiet, Piskounov,

[7] [7] See e.g. chapter on "Freitag Taschen" in Read, Sarasvathy, Dew, Wiltbank, & Ohlsson, 2011

& Patel, 2005). Clearly, then, recognizing opportunities is not only about knowledge gathering and related behavior; it is also about the assimilation of new knowledge. Cognitive processes such as counterfactual thinking (Baron, 2000), connecting seemingly unrelated dots (e.g. Baron, 2006), or linking to prior knowledge and experience (Shane, 2000) and learning (Corbett, 2005) may all foster opportunity recognition. Entrepreneurs observe (potential) customers and their behavior, exchange information with other actors (idea networking), experiment physically and mentally, or question the status quo (Dyer et al., 2008), just as designers do.

Opportunity evaluation

Entrepreneurs evaluate entrepreneurial opportunities by deploying a range of heuristics. For instance, they perceive whether their existing knowledge resources are appropriate for the opportunity (Haynie, Shepherd, & McMullen, 2009); they assess the opportunity in terms of risk (Keh, Foo, & Lim, 2002); they refer to their feelings and emotions about the opportunity (Foo, 2011); and they evaluate potential markets as well as potential financial gains (Ozgen & Baron, 2007). Furthermore, evaluation processes may be nested in actions, social interactions, and retrospective sense-making of actions, especially when markets are newly created (Sarasvathy et al., 2003; Sarasvathy, 2001; Weick, 1995).

Design evaluates opportunities by „making“, or turning ideas into innovations (Cox, 2005) through a conscious decision-making process in which information (an idea) is transformed into an outcome that may be tangible or intangible (Von Stamm, 2008). In addition, experimentation, prototyping, and visualization are used to evaluate and test ideas, concepts, strategies, and so on. The evaluation of ideas in general, and of opportunities in particular, is an intertwined process of experimentation, visualization, and testing, during which diverse evaluation criteria are used. Venkataraman et al. (2012) state that „both processes of making and finding are intertwined in the practical reality of how opportunities come to be “ (p. 26), stressing Schön’s point that doing can lead to reflecting, leading to better doing, and so on.

Opportunity exploitation

Opportunity exploitation often involves risk-taking, as financial means and individual efforts are invested and future outcomes (financial gain or loss) remain unclear at the outset. At this stage, entrepreneurs experiment both physically and mentally (Corbett, 2005; Dyer et al., 2008) and use trial and error to find solutions to problems (e.g. Deakins & Freel, 1998), and this

"demands imagination, inspiration, and protracted endeavour" (Sarasvathy, 2001). This process is iterative in nature as, through actions, new opportunities emerge or other solutions appear and the ideal typical planned process may become obsolete (e.g. Sarasvathy, 2008).
As already noted, design processes are also iterative and integrative, mirroring the concepts of reflection-in-action (Schön, 1983) and effectuation (Sarasvathy, 2008). However, at this point of the entrepreneurial process, design management starts to take a strong lead. Beyond new product development, design and design management are "engines to commercialise" new offerings. For instance, the launch of new offerings might include feedback from customers or other stakeholders, leaving room for adaptation, or exploitation of new business opportunities might be accompanied by a careful orchestration of other company touchpoints (Cooper et al., 2009).

Entrepreneurial design management

Based on the theory reviewed above, how can we now conceptualise design management as an entrepreneurial activity? The core elements of entrepreneurship consist of a *business opportunity* that is recognized or created, evaluated, and exploited; the *resources* necessary to act on the opportunity; and an *organisation* that fits the envisioned company future to its market environment (Fueglistaller, Müller, Müller, & Vollery, 2012). Depending on the positions of design managers in a company, they will be able to influence most of the above-mentioned areas. If, for instance, the design manager is in charge of trend monitoring or product development, then opportunity recognition, evaluation, and exploitation might be precisely the core of his job description. They may also be in a tactical position to exert some influence on decision-making with respect to resource allocation and organisational change.
While all these considerations are already the "bread and butter" of a design management function, they may at times disappear into the background of daily operational pressures. To then ask very simple and focused questions may produce the frame of mind necessary to react to disruptive change. Stevenson and Gumpert (1985) list the following questions as typical of the entrepreneurial approach:

- Where is the opportunity?
- How do I capitalize on it?
- What resources do I need?

- How do I gain control over it?
- What structure is best?

An opportunity to execute entrepreneurial design management might, of course, also present itself when design managers or leaders are involved in the founding of new ventures or spin-offs. However, the opportunity to create an organisation from scratch may also often mean limitations on such things as access to financial means, access to markets, the possibility of cooperating with partners, and so on. The following visualisation (Fig. 3) adapts the key elements of entrepreneurship (Fueglistaller, U., Müller, C., & Vollery, T., 2012) to represent an entrepreneurial mode of design management.

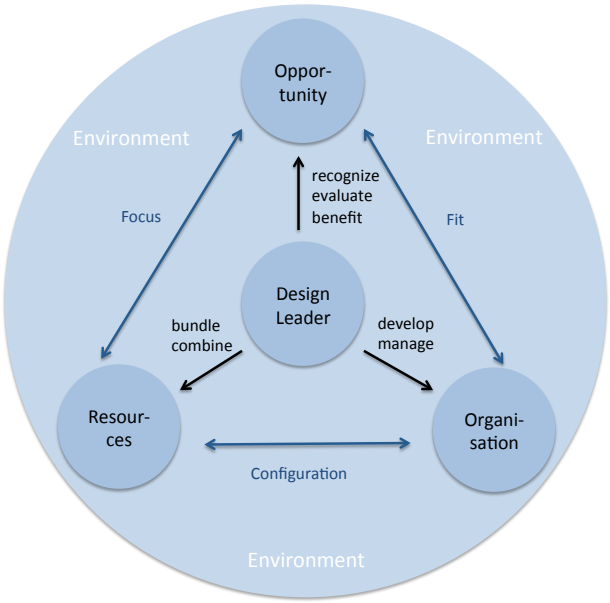

Figure 3: Adaptation of key elements of entrepreneurship (Fueglistaller, U., Müller, C. & Vollery, T., 2012)

Discussion

Design management and its modes have changed over time. While a historical contextualisation would offer an interesting perspective on the

modes, we argue that all of them (and probably more) coexist today, depending on the awareness, needs, and organisational capabilities of a firm. Categorizations change over time, depending on the moment we choose in the history of design management. In this paper, however, we have chosen to look backward and forward from a perspective of disruptive economic change, and this will also be the main focus of the discussion. The following taxonomy of design management modes (Table 1) compares the four modes, using the categories of goals, mode/attitude, organisational processes in which design is involved, design capabilities, people, and contribution to corporate strategy.

Table 1: Taxonomy of design management modes

DM-Modes	Simple Mode (1)	Integrated Mode (2)	Dynamic Mode (3)	Entrepreneu-rial Mode (4)
Goals	Effective/ efficient design (project) management	Orchestrati on of touchpoints across functions	Sustainable competitive advantage through mediating between inner and outer worlds	Exploiting new business opportunities
Mode / attitude	Selective design use	Integrated design	Transforma-tion by design	Exploration and exploita-tion by design
Organi-sational processes	Single design projects connected to NPD, corporate and brand design activities, etc.	All processes contributing to the customer experience	Strategic management; innovation management; process design; change management	Strategic management, strategic level of design management
Design capabilities	Sourcing, briefing, designers; managing and evaluating design	Planning, coordinatin g, aligning, infusing design	Designing the capabilities of the firm; de-/re-linking; (re-)configu-ring resources	Creating, recognizing, evaluation, exploiting opportunities

	projects			
People	Marketers, product and design managers	Design managers	Design leaders and managers, senior managers	Design leaders and managers
Contribu-tions to corporate strategy	Improved products, appearances, etc.	Coherent positioning	Strategic flexibility and competitive advantage	New business segments, new business ventures (e.g. spin offs)

The comparison of the modes as summarized in Table 1 makes it apparent that modes 1 and 2 focus more directly on how to manage design inside the company. Although there is a movement from "efficiency and effectiveness" (mode 1) to a more infused state of design at all levels and in all aspects of a company in mode 2, both of them represent inside-out approaches. In its most elaborate form (mode 2), design management fosters and strengthens design as a company resource that makes itself felt at each touchpoint and in the overall positioning of a firm. In its worst form, mode 2 turns into the notorious "design police", hunting down corporate identity trespassers.
Mode 3 takes an active step away from merely coordinating internal processes and resources towards the environment of a company. A dynamic mode of design management mediates between the inside and the outside systems of a firm by actively facilitating knowledge absorption and exploitation. Mode 3 ultimately aims at changing a company and at "un-stucking" design where it may have become stuck or sticky as a resource. However, for companies trapped in the innovator's dilemma (Christensen, 1997) that don't want to endanger their core business by integrating new disruptive technology, the decoupling and recoupling of design resources may be too slow a way out of their current situation.
Mode 4 builds on mode 3 but represents a more radical departure from the inside-out approaches of mode 1 and 2. In an area of disruption, a swift response to environmental threats is called for. If executed in an existing company, mode 4 would adopt an external, market-oriented perspective as opposed to being an administrator of internal design resources. For instance, Steven & Grumpert (1985) make a distinction between the "promoter" and "trustee" types of manager; the former is active and alert, able to seize new opportunities and capitalize on them, while the latter fears change. However, disruption—which typically unfolds through new

technologies or changes in consumer economics, social values, political actions, or regulatory standards (Stevenson & Grumpert, 1985)—affects different organisations in different ways. It follows that another option, as suggested by Christensen (1997), might be to activate even more basic entrepreneurial modes of management such as the exploitation of new technology by founding company spin-offs.

Conclusions

This article has described three modes of design management and a fourth entrepreneurial mode, required in an area of disruption. While modes 1 and 2 unfold their strengths in a stable economic situation, modes 3 and 4 are more suited to dealing with uncertainty, ambiguity, and disruption. In particular, mode 4—the entrepreneurial mode of design management, reinforcing well-known basics of entrepreneurship—builds on the capability to not only recognize but also to create new business opportunities. In this mode, design managers leverage entrepreneurial thinking throughout the company by exploiting opportunities, allocating necessary resources, and altering organisation and company culture where needed.

The entrepreneurial mode of design management also emphasises two dimensions essential for any creative enterprise: the dimension of design as a creator of new opportunities and the dimension of design management as a driver of the exploitation of these opportunities. These two dimensions can be applied with a view to new forms of creative entrepreneurship and intrapreneurship—to escape the inertia of established companies or to create a new form of "indie capitalism" (Nussbaum, 2013).[8] Today, there is in fact a visible trend towards more creative entrepreneurship (Giesa & Schiller Clausen, 2014).

For now, however, this paper can only speculate about this future mode of design management by observing trends. A future research direction would have to look for empirical evidence of this new mode of design management by studying design managers' responses to disruptive change.

[8] Nussbaum (2013) is talking about the emergence of an "indie capitalism", questioning "big capitalism" (and the crises it produces) through local, sustainable, and human-centric business models.

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