



Maximizing the Competitive Value of Product Design Innovation: Re-framing and Re-aligning the Design-Business Relationship

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This paper focuses on the contribution of the independent product design industry to business and strategy development processes of contemporary organizations. It embarks from the observation that whilst some policy-makers and enlightened businesses recognize the role and value of design beyond the traditional and narrow confines of technical or 'commodity' input, many fail to understand its potential as a transformative tool. Applying evidence from three empirical studies (undertaken by the authors in the UK), and taking the perspective of design creative, the paper addresses three questions: why is it that product designers have encountered resistance in their efforts to promote themselves as well-placed and knowledgeable providers of strategic development intelligence and advice; what proven contributions can product designers offer with respect to their client's business development planning; and, what can and should be done (by both designers and business leaders) to ensure that barriers are dismantled and the potentially valuable role of design in strategic business development is realized?

Keywords: Competitive innovation; design-business relationship; design thinking; opportunity development

Introduction¹ It is clear that the term ‘innovation’ has recently enjoyed significantly heightened exposure in policy and political discourse and it is arguable that the term now stands alongside ‘growth’ and ‘competitiveness’ at the forefront of the consciousness of the political elite. Indeed, the concept of innovation has been at the heart of much recent economic and industrial policy-making, and the past few years have witnessed a rash of initiatives and incentives designed to stimulate and support increased innovation activity within and across all sectors of the private and public sector economy (Gallouj, Rubalcaba and Windrum, 2013). In line with this re-focusing of thought and effort around innovation, there is much evidence of growing interest in the creative and design sectors as fundamental props and engines for innovation. The notion that innovation is important is taken as a given in this paper: our fundamental concern here is to focus on how and why innovation is (or is not) successfully operationalized, and to excavate the role of designers in delivering innovation value in contemporary business environments.

The support for innovation that the design sectors provide is perceived to derive from two sources: first, directly from the innovation and trading activities of dynamic and entrepreneurial design and creative companies; second, indirectly from the work they undertake to assist product and business development in partner and client firms. Indeed, the design industry is now viewed in many quarters as an important player in national economic health, articulating and facilitating as it does the processes of creativity and innovation that lie at the heart of enhanced economic competitiveness and business success (Cox, 2005).

Given the reinvigorated interest of politicians and industrial and economic commentators in the role and significance of design, it is perhaps surprising that little effort has been applied to a se-

rious appraisal of the ways in which design enters, functions and impacts in industrial and commercial settings (i.e., the way design ‘gets done’ in everyday designer-client encounters and the way that it is mobilized and actualized in business environments). If the design sector is such an important driver and facilitator for innovation, a detailed understanding of the interplay between design, innovation, business and the exploitation of commercial opportunities is surely crucial (especially if an important goal of policy action—the articulation or embedding of design in business processes—is to be achieved). It is in this ‘gap’ in current understanding that this paper is positioned. Here we argue that some bold, and perhaps flawed, assumptions regarding the relationship between designers and their business clients have been allowed to go unchallenged. Specifically, we argue (primarily from the position of design-industry practitioners) that the connection and interchange between the two parties—often assumed to be unproblematic—is frequently fraught and strained. Historically, design practitioners have displayed little adroitness in promoting the benefits of their offering, whilst their counterparts in business have failed to recognize the potential in embracing and embedding

¹ Earlier versions of this paper were presented at IASDR and IPDM conferences in 2007 and 2009 respectively. The authors wish to express their gratitude for the many comments and reflections received from participants in these events, all of which have contributed to improvement of the work. We also wish to express our thanks to the colleagues at various UK institutions that have read and commented upon the current and revised version—their assistance has resulted in much further improvement. Any mistakes or omissions that remain in the paper are the sole responsibility of the authors

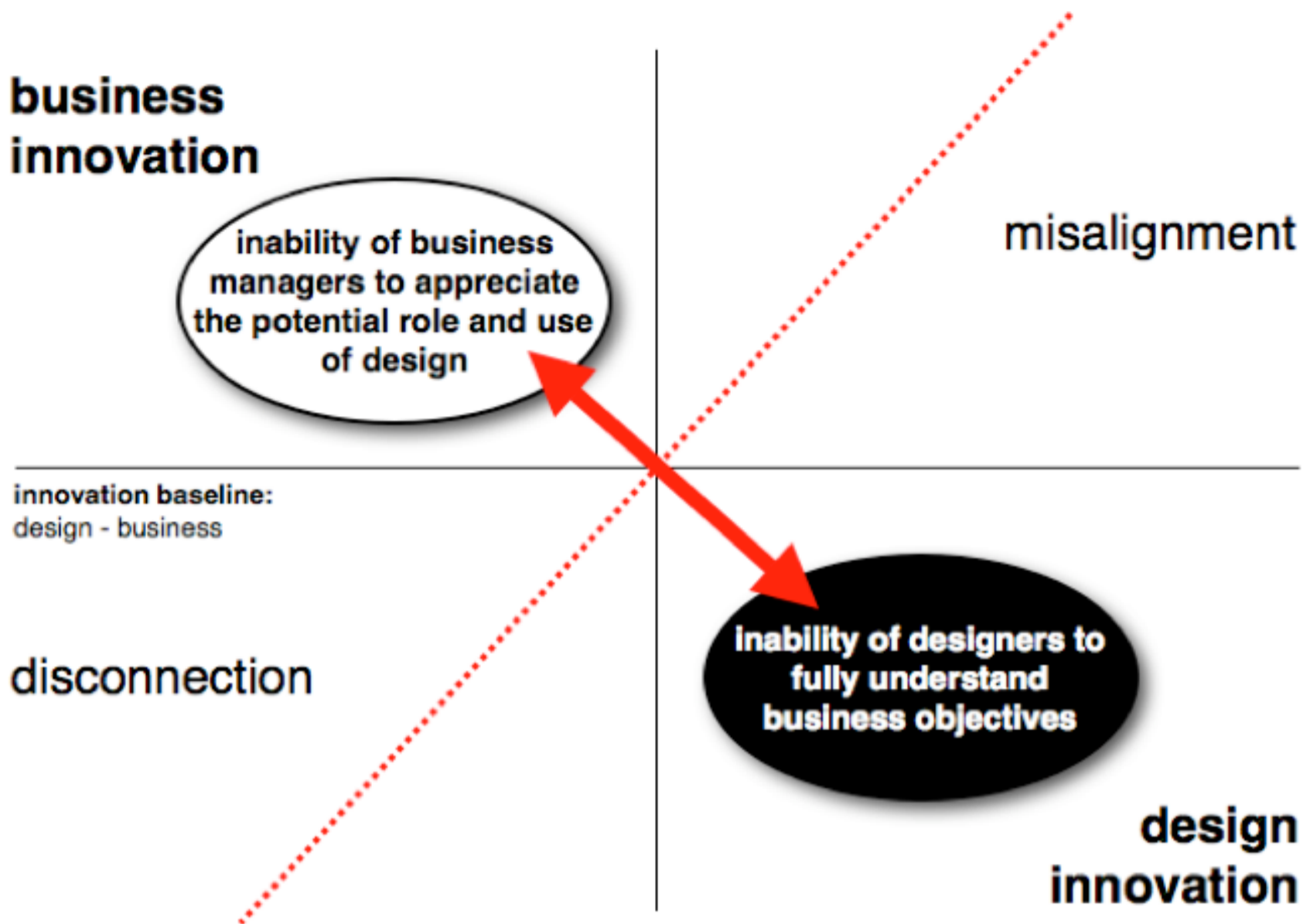


Diagram 1: Disconnection and misalignment in the contemporary design-business relationship

design as a core business activity (Brown, 2008; Topalian, 2006; Delaney, 2005; Heskett, 2002). It is our contention that this situation has resulted in a sub-optimal utilization and positioning of design in UK enterprises. Further, we suggest that the problem is founded in a significant degree of *disconnect* and *misalignment* between the aspirations, vocabularies, cognitive frameworks and worldviews of designers and their actual and potential clients in the manufacturing and services sectors (see Diagram 1). This disconnect has important implications for the ways in which design is deployed in business contexts, and the nature and implications of the disconnect and some possible remedies—in the form of *realignments*—are the key themes that the paper will address.

The paper—predicated fundamentally upon the perspective of design practitioners, and driven by an understanding of the challenges confronted by designers as they interface with business—opens by examining the context in which business and design activities in the UK are currently played-out. Here we consider the linkages between design, innovation and *competitiveness* (We use the term competitiveness here to reference the ways in which design and innovation (specifically) can be harnessed to deliver

new or enhanced products, positioning and market performance), and the ways in which the design sector has been perceived to constitute an important contributor to economic growth. On the basis of findings from our joint research activities, we highlight some of the realities that product design practitioners in the UK face today and allude to misalignments and fractures in the design-business relationship that we identify as *disconnect factors*. The next section moves on to deal more specifically with the role of design and designers in innovation, and to unpack and decode the problem of disconnection (relating this to contributions from relevant literatures). The paper concludes by arguing for *realignment*, in essence, the development of an effective shared vocabulary, the establishment of congruent cognitive frameworks, and the facilitation of change in cultural attitudes—among players in both camps—towards the business-design relationship. Here we propose some solutions in the form of *realignment strategies* that are designed to address both the causes and symptoms of disconnection. We also explore the notion that some of the main perpetrators of disconnection (albeit unwitting offenders) are close at hand in our Business and Design Schools. It is our contention that we need to move beyond the tokenism, prejudices and

veneer orientations that exist in the two camps, to examine the theories and practices that characterize each, and thus to work towards engendering new, innovative approaches to business and design school thinking. Attitudes, curriculum content and pedagogic strategies can and should change, and meaningful collaborative practice can surely deliver mutual benefits.

Methodology

The material presented in this paper is based largely on UK experience and reports on trajectories identified since the mid-period of the last decade. Much of the argument elaborated here results from three interlocking studies of trajectories, challenges and strategies in the industrial design sector (each undertaken by the authors). The first (Study A), managed by Green, involved extended interviews with 20 senior practitioners in larger UK Product Design Agencies: the study was designed to provide a broad-ranging review of trends and strategies in the UK product design sector. Conversations were conducted with principals in some of the major and most successful design companies in the UK (and internationally) in the period up to 2010. The second (Study B), undertaken in conjunction with London Development Agency, (and based on a survey and interviews) was designed to measure the effectiveness of design-related seminars, training and showcase events within five business sectors (food, luxury goods, retailing, animation & games, and biomedicine). This work (managed by Bolton) was undertaken mainly in the South East of the UK, the center of the nation's design industry, and an important global hub for design activity, development and education. The study focused centrally on conceptualizing and characterizing the nature and challenges of design-business relationships. The third and most recent study (Study C, undertaken by Green in Birmingham in the UK in the early part of 2014) involved face-to-face interviews with ten designers and creative practitioners. It was initiated, in part, with the aim of examining the ways in which creative entrepreneurs manage their relationships with both up-stream and down-stream partners. It was also designed to test and extend some of the ideas and outcomes derived from the earlier studies, checking on changes of direction and emphasis, and evaluating continuity in the relevance of core insights. The paper as a whole, then, is based on qualitative evidence drawn from a survey and more than 40 interviews, conducted in three phases over a period of seven years with a range of design practitioners across the UK. Where the opinions and views of particular respondent-sets are reported, this is highlighted in the text by references to Studies A, B or C.

The Role Of Design In Business Development - A Situated, Contemporary Reading

We are frequently told, particularly in the UK and Europe, that design is an important strategic component of the creative industry's contribution to current and future economic success. The

clear implication here is that there is some form of strategic value within the business and design relationship. In addition, the importance of 'design thinking' and a design-led approach to strategy development within business activities is currently a hot topic. However recent research indicates that designers in the UK frequently complain that their clients fail to understand the real value and potentially (substantial) contribution of design across the range of business development activities (Miles and Green, 2008). Indeed, it is clear that the marginal role of design in the business development milieu (as broadly conceived) is a sore point: here we consider that role from both a strategic- and a practice-based perspective.

The Strategic Perspective

The importance of strategic partnerships in achieving business success is frequently articulated by government organizations and publicly-funded trade development bodies (DBERR, Design Council, regional development agencies etc.). These pronouncements are mirrored by organizations in the private sector, where corporations and trade and professional associations often speak of the fundamental value of commercial linkages and partnerships in an increasingly networked economy (Chesbrough & Schwarz, 2007). Despite the power of these narratives and the currency of the networking vogue, many design professionals in the UK speak of the *fickleness* of clients. Our respondents in Study A assert that even where long-term co-working has led to market successes, clients will often walk away from relationships in search of cheaper options. Moreover, once a designer has established a meaningful partnership, maintaining contact with business clients appears to present an ongoing problem. The movement of design buyers and design managers —*industrial churn*— often constitutes a concern for design consultancies. Design industry representatives (again in Study A and also in Study B) report that there is considerable flux within client companies and long-term relationships can be lost where a design buyer/manager exits a client company. Further, transfer of responsibility (where supplier-client contacts are maintained) almost invariably implies the downgrading of relationships².

The quality of designer-client relationships depends fundamentally upon the level at which designer access to a company is achieved. This point was made strongly by a respondent in Study A (a globally renowned design thought-leader) and re-visited and confirmed in several subsequent conversations. Many designers

² Problems associated with personnel churn are reported to be significant ones by design practitioners (in all of the studies upon which this paper is based): however, the movement of design managers and buyers can occasionally lead to the development of new business with the companies into which such individuals implant themselves. Some designers (Study A) report that where strong relationships have been established with individual buyers/managers, movement is not necessarily a problem, and there are examples of design agencies generating important business in new sectors via the movement of contacts from existing clients

report that they tend to 'get in' at middle-management level: this is problematic for a number of reasons. First, a 'strategic' role for design is obstructed or obviated; second, middle managers will frequently lack sufficient power to sanction designs (extended and mediated negotiations and 'Chinese Whispers' will then ensue); and third, middle ranking managers can be concerned more with elevating their own power, interests and position rather than securing 'good' and appropriate design. Our informants report the existence of some 'enlightened' and 'design savvy' clients – these companies tend to (a) employ design managers (either trained at university level or with a practitioner background in design), or (b) possess directors that maintain a close eye on design issues. Enlightened clients tend to recognize and foster a broader and more strategic role for design. However, such companies are reportedly few and far between and the more common experience of designers (reported particularly in Study C) is that clients frequently lack even the most basic understanding of the practice and potential of design. 'Configuring the client', i.e., delivering to them a basic platform understanding of what is feasible (and then perhaps, desirable) with respect to design, can be a time-consuming and frustrating activity, and one that does not always lead to successful partnering or project outcomes. A lack of understanding on the part of client of what might constitute good, strategically useful, or successful design, or a failure to consider or appropriately specify the problem or strategic goal for which a design solution might be relevant can lead to degraded respect, disaffection and sub-optimal evaluation of the value of design inputs. In some cases, our respondents report that it can lead to fractured commercial relationships, and in the worst cases, to disputes with respect to payment. Further problems associated with misunderstanding of roles and misaligned expectations was reported in Study C: respondents noted an increasing tendency for clients to assume ownership of intellectual property: again, a trigger for friction and (potentially costly) disputation.

The strategic importance of delivering innovation to the market is a widely recognized priority for many companies: however, *the value of design* as an underpinning mechanism for such delivery is frequently downplayed. Designers (in Studies A&C) report that, too often, design is perceived as a cost rather than an investment. Recent years have witnessed (a) significant commoditization of design (it has become easy and cheap to buy basic design services as practitioner numbers within the industry have swollen), and (b) a growing perception that design should be designated a *craft* rather than an intellectual or professional activity. According to senior design industry commentators (Study A), to avoid further commoditization, designers should re-focus their offer around 'building brand' for their clients. The commoditization of design has also implied that clients have increasingly perceived design as an activity that is relatively 'easy'. With over-supply in the market and a failure to recognize the real value of design

(and longer-term designer-client relationships), many clients are happy to shop-around in search of reduced design outlay and increased 'novelty', quality or fit. Many agencies report that a squeeze on development budgets has implied that design buyers are eager to push-down design costs. Reported originally in Study A, this appears to be a trend that has hardened in the period since the economic crisis of 2008, and our informants in Study C report a grim commercial picture, one in which clients are eager to secure very cheap or *pro bono* work with vague and frequently unfulfilled promises of 'jam tomorrow'.

An important factor to emerge from across our studies concerns the client-ascribed and self-ascribed status of design and designers. Many experienced and senior designers (especially in Study A) speak of a 'confidence deficit' in the design industry and serious status asymmetries in the design-business relationship. They argue that, to a degree, design professionals have perceived themselves (and allowed themselves to be perceived) as subservient to their clients. Status asymmetries are an important challenge for the industry – senior managers within client firms (with a background and training in business), are likely to perceive their own status as significantly superior to that of the designers they hire. Indeed, business training and acumen, underpinned by an academic education in a 'good' University or business school, is held to confer status well beyond that conferred by design education—often perceived as 'craft' or 'vocational' training—in a middle—ranking university or former polytechnic (i.e., those institutions that tend to focus on practice— rather than theory-oriented disciplines). In addition to the linked issues of status and confidence, senior designers (Study A) indicate that it is crucial that design practitioners speak (and understand) the language of business. A command of business argot and an understanding of business culture, values and attitudes can assist designers in conveying their message and a sense of their worth: confident communication from a shared platform of knowledge and values ensures that design 'gets noticed'. Despite this, a majority of designers indicate that few amongst their number have any significant business training and that this disadvantages them in the commercial world (for example, some designers will still engage in 'free pitching' despite the controversy surrounding such activity and the dangers inherent in the approach). Again, respondents in Study C (our most contemporary research) confirm this point, with only a small minority claiming significant business experience and acumen, and a large majority fearing that knowledge asymmetries and a lack of commercial capability leaves them vulnerable to exploitation.

The Practice Perspective

The Cox Review clearly recognizes the role of creativity and design in helping to deliver innovation to the market place (and Cox is certainly not alone highlighting the linkage, see for example,

Borja de Mozota, 2003; Press and Cooper, 2003; Brown, 2008; Bolton and Green, 2008). Given this broad recognition, there are surely valid questions relating to *why* design appears to be undervalued as a driver and tool for business development. A useful means of exploring these questions is found via consideration of current UK *practice*, and an examination of the focus of contemporary design activity.

Evidence from recent surveys and studies (Miles & Green, 2008; Tether, 2006), indicate that designers—including those from larger, more successful and well-established agencies—report that their main focus is on the design rather than business problems of clients. Whilst almost all informants across our studies indicate that they conceive of a more strategic role for their services, convincing clients of the value of design as a strategy-development or strategy-forging tool is deeply problematic (see the points relating to ‘client configuration’ above). Most designers report that simply securing access to senior management or board members—i.e., those with some clout in the strategy-building process—is extremely difficult. Some informants suggest that experience and track record (i.e., *professional gravitas*) can open doors into the higher echelons of a business, but once there, maintaining a presence is a formidable challenge (and one that is made more difficult by the ascriptions and prejudices noted above). Only the largest agencies, and within them, the most senior designers (Study A), report that their normal mode of access is at the higher levels of client organizations and that activity is centered on strategic development.

Increasing ‘dependence’ and pressure on pricing are frequently identified as further problem issues in the design-business relationship for UK practitioners. Some report (Study A) that dependence (in the form of either ‘dependent clients’ or a client’s perception that a design supplier is ‘trade dependent’) can constitute a negative consequence of very close client interactions. In the first case, the investment of energy and resource in the development of a relationship with a specific client (client configuration again) can imply that alternative opportunities are missed. This is a particular problem for smaller agencies or for agencies that deal with SMEs where absorptive capacity relating to design inputs can be limited or non-existent (Cohen & Levinthal, 1990; Tether, 2000; Miles, 2005). In the second case, where a client suspects or knows that a designer has invested significant resource in relationship building (and in design work for that client) and that an agency has few alternative clients, downward pressure on prices can result. This relates to the ‘fickleness’ noted above and in some respects is a symptom of very high levels of competition and possible over-supply in the sector (our respondents in Study C make much of this, especially the influx of young overseas trained designers from rapidly industrializing nations). It also relates to creeping commoditization of design and alleged undervaluing of the skills of the designer. Conversely, although dependence is

perceived broadly as a negative phenomenon, there are examples of clients and designers working in deliberately ‘dependence-intensive’ relationships. This is especially true in high budget development projects (typically large infrastructure enterprises), where upfront investments in design hardware and software are required: here it is not uncommon to find clients funding such investment and locking themselves in to long-term, trust-based relationships.

Adding to pressure on UK-based designers is the allegedly increasingly demanding nature of clients. Designers (especially in Studies A&B) report that heightened demands are experienced in the form of requirements to produce a broader range of alternative designs, to produce this range against tighter time-scales, and to deliver on the basis of reduced fees. These changes are perceived to be linked to some degree to the diffusion and more sophisticated use of ICTs in both design consultancies and client firms (and certainly, CAD has led to an expectation that design work can be produced rapidly and that many competing alternatives of any given artifact can be presented—in photo realistic mode—within a short time-scale). Beyond this however, there is suspicion among the designer community that increased pressures are linked with a fundamental failure on the part of some clients to understand the process of generating and delivering ‘good’ design. Many UK designers contend that ‘more design’ at a lower cost is not necessarily better use of design budgets and is rarely likely to result in development of an optimal design (let alone one that will encapsulate or enhance brand value or strategy).

Another recent and evolving threat to design is the growing global re-location of manufacturing. This trend has seen many clients of UK design shift their operations to low-wage economies in the East (a phenomenon with its roots in the 1990s, and reported as an issue by respondents in Studies A&B but one that has continued and solidified throughout the past decade). Whilst this has not implied that design work has disappeared from the UK, several agencies in our studies report that it is likely that some (perhaps most) elements of design will gradually agglomerate in global centers of production. There is certainly anecdotal evidence that re-location of former UK-based manufacturers is leading to a loss of design opportunities and trade in the UK. According to informants (Study A), the quality of design education and design teams (often led by UK and European designers) in the East is improving. Whilst Far East designers have yet to develop a sophisticated understanding of the visual language and culture that will permit them to operate successfully in European markets, there are signs that progress is being achieved at a rapid rate. Moreover, designers in the East are obviously perfectly placed to supply design services to support burgeoning demand for industrial and consumer products in domestic Eastern and Asian markets. Conversely, some respondents in Study C (especially those

working in niche and luxury sectors) report that their specialist skills are frequently highly valued by affluent domestic clients, especially those that buy-in to a perceived mystique around high-end bespoke and luxury design practitioners (especially high-end and specialist designer-makers).

Summary: Framing Disconnection

It is clear from a reading of the findings of the three UK studies that disarticulation and misalignment in the design-business relationship is evident at both strategic and operational levels. To summarize, we argue that it is possible to identify a number of key 'disconnection factors' that require attention if it is to be possible to improve (for mutual benefit) future interactions between the design and business communities. These disconnection factors are:

- Underestimation of the value (and potential role) of design.
- 'Fickleness' in clients' attitudes to the design-business relationship.
- Discontinuity in relationships (loss of key contacts within client organizations as a result of 'churn').
- Inadequate access to key decision makers within organizations (and a consequent lack of a strategic role for design).
- Poorly specified and misaligned objectives and expectations with respect to the design 'product'.
- Globalization - re-location of client's operations and re-location of design.

- Pressure on pricing ('dependence relationships' and commoditization of design).
- Presence of a 'confidence deficit' and status asymmetries in the design-business relationship.

Conceptualizing Problems In The Business Development Game

The innovation-Design Relationship

Innovation is viewed as an important aid to both sustained success in business and the exploitation of new ideas (especially in competition-intensive environments) (Cox, 2005). Innovation activity and investment is clearly of growing importance to businesses, with greater numbers of companies listing innovation as one of their core priorities. More significant is the proportion of companies that indicate that innovation is their number one priority: this figure more than doubled to 40% in the later part of the last decade (Boston Consulting Group, 2006). Beyond the private sector, there is also growing interest in innovation and 'modernization' in the public sphere with pressure to improve service provision and delivery stimulating high levels of investment in both 'top-down' and 'local' innovation initiatives in healthcare, education and government (Cunningham *et. al.*, 2005). Indeed, the public sector is now perceived as a central locus for innovation in service delivery, organizational alignment, and technology utilization, all of which—incidentally or otherwise—are areas in which public-private partnerships are finding an increasingly important role.

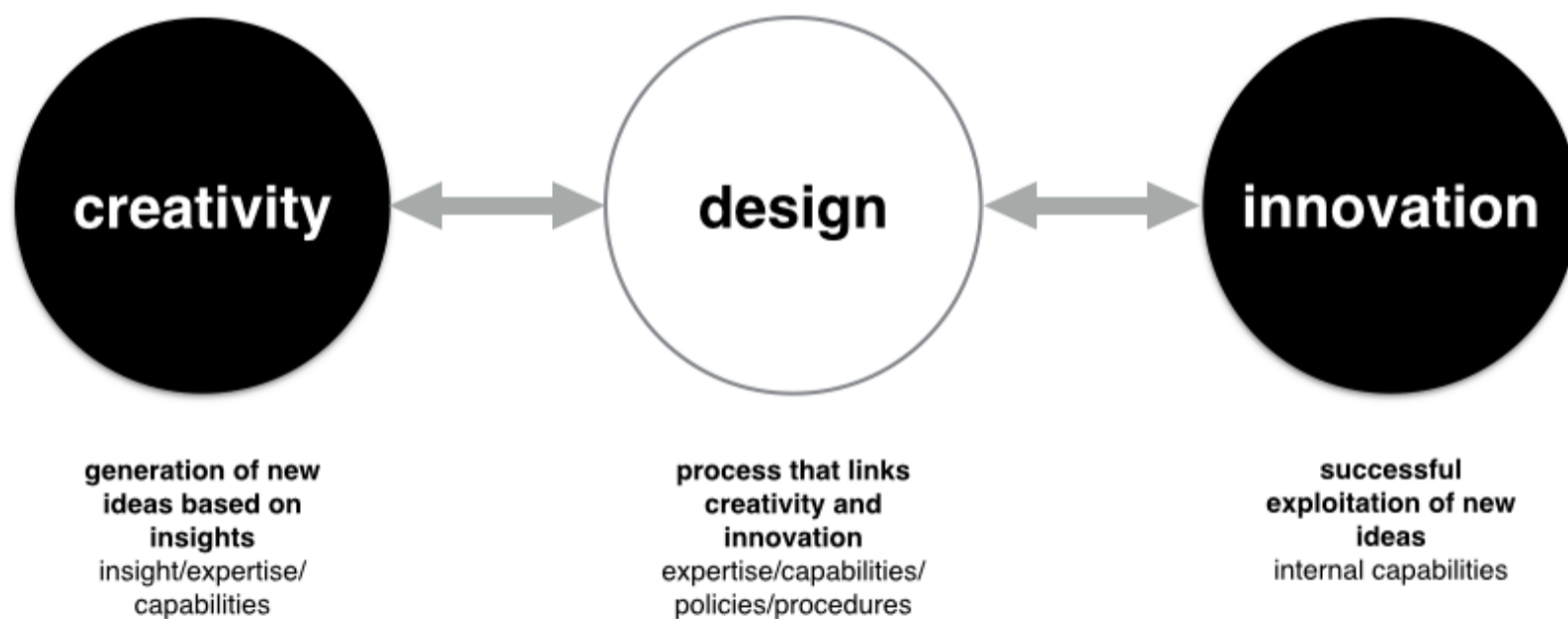


Diagram 2: Disconnection and misalignment in the contemporary design-business relationship

3. We should note here that this is a basic definition and our preferred configuration appears in Green and Oliver, 2011. These authors state: "innovation' is about (a) the process of people translating ideas into new products and processes, and (b) taking novelty out into the world in an effort to create value or substitute or improve upon existing systems, approaches, products or practices". This configuration places human activity at the center of a process of translation and combination of creative insights, ideas, experience and technologies, and the expression and application of these in novel products and processes

4 We might note that design too has many definitions: as Bolton and Perez (2014) suggest, "[Design] can be seen as: (1) an intellectual and practical resource that comprises the process of inspiration, ideation and implementation of ideas... which is predicated on intuition, pattern recognition and the ability to express in other ways than just words; (2) a creative approach that can be put to use with a clear objective, that seeks to develop and enhance ideas by behaving as the link between creativity and innovation, (Cox, 2005); and (3) as a way of visualising strategic thinking to help communicate complex issues more effectively..."

However, the swarming of interest around—and increased activity in relation to—innovation in its many guises and varieties can sometimes obscure the important issue of definition: for the purposes of the current work we need to be clear what we mean when we use the term. There is now a substantial history of scholarly endeavor in relation to innovation, and approaches from various disciplines (economics, management, sociology etc.) have generated multiple, often overlapping definitions (see for example, Nelson and Winter, 1977; von Hippel, 1988; OECD, 1995; Johansson, 2004). These definitions, at the most fundamental level, are concerned with “the successful exploitation of new ideas” (DBERR, 2008), and it is this orientation that we take as our starting point.³ In addition, many definitions are linked to notions of creativity and design, and in our research we have focused on the interrelationship and interdependency of creativity, *design and innovation* as outlined by Sir George Cox in his (UK-based) review of *Creativity in Business* (Cox, 2005). For Cox, *creativity* involves the “generation of new ideas... new ways of looking at existing problems... seeing new opportunities [or] exploiting emerging technologies or changes in markets” (p.2); *innovation* involves the practical realization of such ideas in the form of new products and services; and, *design* is the bridge that links creativity and innovation⁴, shaping ideas into attractive propositions and client offerings (for Cox, this is “(...) creativity deployed to a specific end” (p. 2), see Diagram 2).

Moving beyond Cox, however, we contend that these three factors themselves exist within and are conditioned by *contexts and cultures*. This view is supported by the findings of the DTI ‘Report on Creativity, Design and Business Performance’ (2005), in which ‘culture’ (i.e., the culture that is internal and external to an

innovating organization), and ‘context’ (the structure of markets and orientations and preferences of consumers) are identified as having a significant impact on the delivery of business success.

If we are to address the disconnect between designers and their actual and potential clients, and assist in realigning the relationship between business and design we believe that there is a need to ground or situate creativity, design and innovation by considering contextual and cultural dimensions. For us, ‘culture’ is the key factor that influences the decision to commission and to adopt design, and ‘context’ provides an overarching framework within which decisions are taken. Culture shapes the expectations, assumptions and worldviews of designers and business managers—this is especially important in negotiations and discussions concerning design inputs to the business process (Study A, B&C)—and affects the external parameters that can influence responses to designer’s insights, the adoption of new products (and processes and practices), and the recognition or realization of desirable outcomes (see Diagram 3).

The Design-Business Relationship

Within the context of innovation, design and designers are perceived as a key interface between businesses and their customers. The role of designers is understood to incorporate the delivery of innovation from a strategic brand level through to product and service experience at the user level (Press and Cooper, 2003). The importance and potential breadth of this role cannot be underestimated and implies that it is crucial to understand why there remains—in many instances—a significant disconnection between designer and business client.

The Cox Review provides an insight into the problem by indicating that, “numerous case studies prove that many companies simply don’t recognize the opportunities [of design] or how to pursue them”. Tim Brown of IDEO (2008) articulates the frustration felt by designers from an industry perspective: he suggests that “a key issue in the failure of design to add real value is that the wrong briefs are being tackled” For Brown, designers and business clients waste much time in ‘talking past’ one another, failing to understand perspectives and orientations of the other, and failing to communicate effectively in the mutual specification of a brief that really connects with the visible and hidden, near-term and longer-term needs of the client (a point raised repeatedly in Studies A&C).

It can be argued that the worldviews and cognitive orientations of Business managers and design practitioners are fundamentally different. Whilst generalizations and caricatures can be unsafe, it is fair to assert that business practitioners are frequently characterized as *rational thinkers*, whilst their counterparts in design are cast as *creatives* or *intuitives*. It has been argued over the past two decades, and somewhat controversially (on the basis of develop-

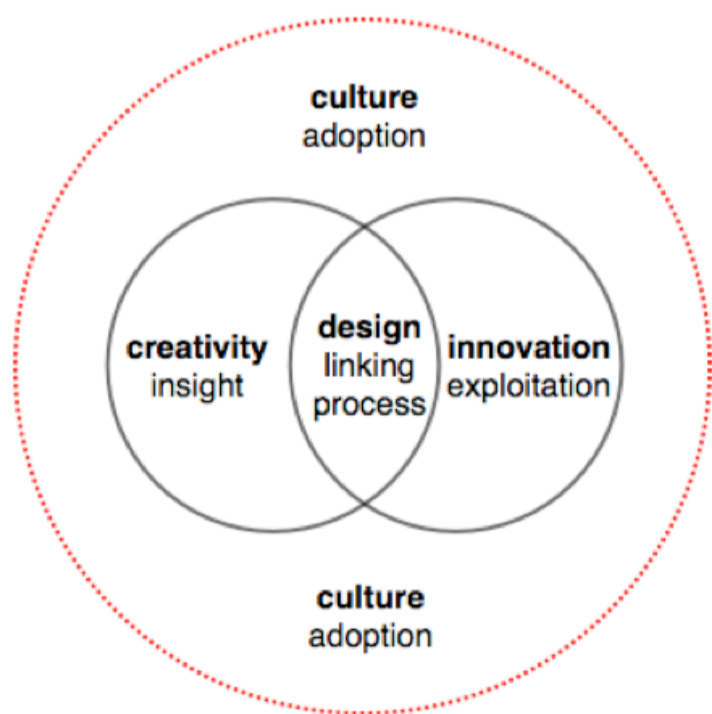


Diagram 3: Revised Cox Model of creativity, design, innovation and culture

ments in neuroscience and psychology) that cognitive orientations and preferences and identifications can be connected with brain function, and that differences exist between individuals in which 'left brain' or 'right brain' are favored or dominant (Ornstein, 1997; Gazzaniga, 1998; Strauss, 1998). Building on work by Trevarthen and Sperry (1973), theorists within this paradigm maintain that a 'left brain orientation' suggests a more linear, rational, analytical, and linguistic approach, and that a 'right brain orientation' is associated with more artistic, musical, spatial and intuitive skills. It has been asserted (again, controversially) that both camps, i.e., business and design, may readily associate themselves with one or other of these stereotypes, but neither is entirely specific to one group (Nielsen *et. al.* 2013).

The exchange of information between business and design functions (or disciplines) is a critical feature in facilitating success (Cooper and Kleinschmidt, 1987). However it can be argued that each discipline has developed its own system of communication, its own language or argot, and its own set of conventions used by those in a specified group or sphere of activity. It can be argued further that these conventions foster disconnections: according to Boland and Collopy (2005) "we are always trapped by our vocabulary of management that brings premature closure to problem solving" (p.17). Whilst these authors write from a business perspective, it is clear that their observations clearly hold in relation to design. Boland and Collopy's research relating to innovation management reveals that the communication methods used by managers to convey ideas, aspirations and methodologies to designers frequently fail to work in business scenarios. Conversely, the ability of designers to link concepts and make connections with a range of possible tools and methodologies is rarely found in the make-up of (technically-oriented) business managers. Clearly, there is evidence here of disconnection. Via the testing of different methods and approaches, Boland and Collopy found that designers respond better where concepts are communicated in a sequential pattern with clearly defined rationales.

Applying the concept of 'problem space' Simon (1996) argues that the first step in any problem-solving episode involves 'representing the problem'. This simple notion highlights a second element that contributes to disconnection between business and design practitioners. Coughlan and Prokopoff (2006) suggest that tools for traditional business planning embark from the assumption that 'maintaining current state' represents an optimal strategy, and that 'incremental growth' is 'satisfactory growth'.

They support and extend this assertion by expressing their continual surprise at how difficult it is for managers, who typically have extensive quantitative and qualitative data at their disposal to 'see' their reality because the data have been stripped of

the emotional content that forms the basis for most compelling initiatives (p. 21).

These authors argue that this inability to see the 'problem space' exerts a major impact on the problem solving process. Effective design (whether incremental or radical) begins with a clear understanding of the problem to be solved. For Coughlan and Prokopoff, business managers need to "get in touch with their customers (and other stakeholders') unarticulated needs and desires", and in order to do this, they must understand that the fundamental approach adopted by designers is to "(...) create frameworks so that they can simplify and unify design opportunities in order to conceive of possible futures (...)"(p. 21)

Further disconnection is apparent when we consider the notion of constraints. Vandenbosch and Gallagher (2005) argue that constraints act as limitations on actions and set boundaries on solutions. They highlight the differences between approaches to constraints in the business and design communities and suggest, many design disciplines recognize and accept constraints as fundamental to their process...[however] unlike those in design disciplines, managers rarely explore constraints. Instead, they expend energy to work around or eliminate them (p. 198).

The authors go on, "[C]onstraints can be accepted or challenged, adopted or explored", and foreground the cultural differences and differences in orientation to constraints that exist between business and design practitioners. They also indicate that the former must contend with organizational culture and resource allocation as factors that can lead companies to fail to fully understand and explore constraints.

Again, according to Boland and Collopy (2005), incumbents in business and design functions respectively frequently demonstrate different attitudes to problem solving. The authors arrived at this position via substantial exposure to design thinking and problem solving in the course of working closely with the architect Frank Gehry. Their experience led them to the view that both management practice and education have allowed development of a 'limited and narrow vocabulary of decision making'. Boland and Collopy contend that via a focus on teaching advanced analytical techniques for choosing among alternatives, "attention to strengthening design skills for shaping new alternatives has withered." (p. 4). They believe that business schools (particularly those in the USA) facilitate a decision-based approach to problem solving which they call a 'decision attitude'. They define this as the process whereby managers face a set of alternative courses of action from which a choice must be made. Decision making behavior assumes that it is easy to generate alternatives but difficult to choose among them. Boland and Collopy argue that this approach is overwhelmingly dominant in management practice, especially in the USA. The

approach aims to solve problems by making rational choices among alternatives and by deploying a range of analytical tools including economic analysis, risk assessment, multiple criteria decision-making and simulation. Further, they assert that a fundamental weakness of the approach is that “it starts with the assumption that the alternative courses of action are ready at hand – that there is a good set of options already available, or at least obtainable.” The authors suggest that the *decision attitude* approach “is too susceptible to early closure” and that it carries with it a *default representation* of the problem being faced. By contrast, a *design attitude* begins by questioning the way in which problem is represented. On the basis of their research, Boland and Collopy indicate that design schools adopt a different approach to problem solving (and foster an alternative attitude) to that found in business schools. A *design attitude* approach focuses on “finding the best answer possible, given the skills, time and resources of the team and takes for granted that it will require the invention of new alternatives” (Boland & Collopy, 2005 p. 6). The contrast with business school thinking here is fundamental insofar as a design approach assumes that it is “difficult to design a good alternative, but once you have developed a truly great one, the decision about which alternative to select becomes trivial”. (p.6)

Contrasting the *design* and *decision* attitude, Boland and Collopy identify four core characteristics of the former: first, a design attitude aims to question basic assumptions in order to determine the *real* problem that is faced; second, it relishes the lack of predetermined outcomes; third, it resolves to develop best possible, practical solutions; and, fourth, good design often resolves problems that were not envisaged in the first instance. Given their clear preference for a design attitude, Boland and Collopy remain sufficiently objective to recognize that the approach has a potential shortcoming insofar as it is “susceptible to keeping the search [for solutions] going after it is beneficial.” (p.7). Here,

they reference the benefits of appropriate, disciplined and timely closure in the more creative phases of the product innovation process.

Summary: Framing Misalignment

On the basis of our combined studies, and via review of relevant literatures and case examples, we contend that design-business misalignment has been spawned and is maintained by conflicts of language, non-correspondent cultures, and differences in attitudes and approach. We highlight the following as key contributory factors in misalignment:

- Multiplicity of definitions of innovation and creative and design practices (providing opportunities for multiple and non-congruent interpretations of activities and approaches)
- Differing systems of communication and differing conventions and protocols (providing grounds for a lack of mutual comprehension)
- Differing approaches to the identification and recognition of opportunities and problems
- Conflicting attitudes and approaches to problem solving (resulting from differing pedagogic and disciplinary codes)

New Rules For Design And Business – Realignment Strategies

It is clear that innovation is viewed widely as an important aid to both sustained success in business and the exploitation of new ideas. It is also apparent that design constitutes a potentially important strategic component in current and future economic success (Danish Design Centre, 2003; Power, 2004; Green, Cox and Bitard, 2012). The obvious implication therefore is that design carries some form of strategic value in the business development arena. Yet our research and findings suggest that disarticulation and misalignment in the design-business relationship is evident at strategic, operational and training/educational levels (Table 1). We have also found that misa-

Design-Business Change Focus	Disconnection and Misalignment Factors
Educational Practices	<ul style="list-style-type: none"> • ‘Confidence deficit’ and status asymmetries in the design-business relationship • Multiplicity of definitions of innovation and innovation practice (leading to non-congruent interpretations) • Differing systems of communication and conventions (resulting in asymmetries in comprehension) • Conflicting attitudes and approaches to problem-solving (resulting from different cultures in design and business organizations)
Strategic Practices	<ul style="list-style-type: none"> • Underestimation of the value (and potential role) of design • Globalization – re-location of client’s operations and re-location of design • Fickleness in client’s attitudes to design-business relationship
Operational Practices	<ul style="list-style-type: none"> • Discontinuity in relationships – loss of key contacts within client organizations (as a result of ‘churn’) • Inadequate access to key decision-makers within organizations (and a consequent lack of a strategic role for design) • Pressure on pricing (‘dependence relationships’ and commoditization of design) • Differing approaches to the identification and recognition of opportunities and problems

Table 1: Summary: disconnection and misalignment factors in the design-business relationship

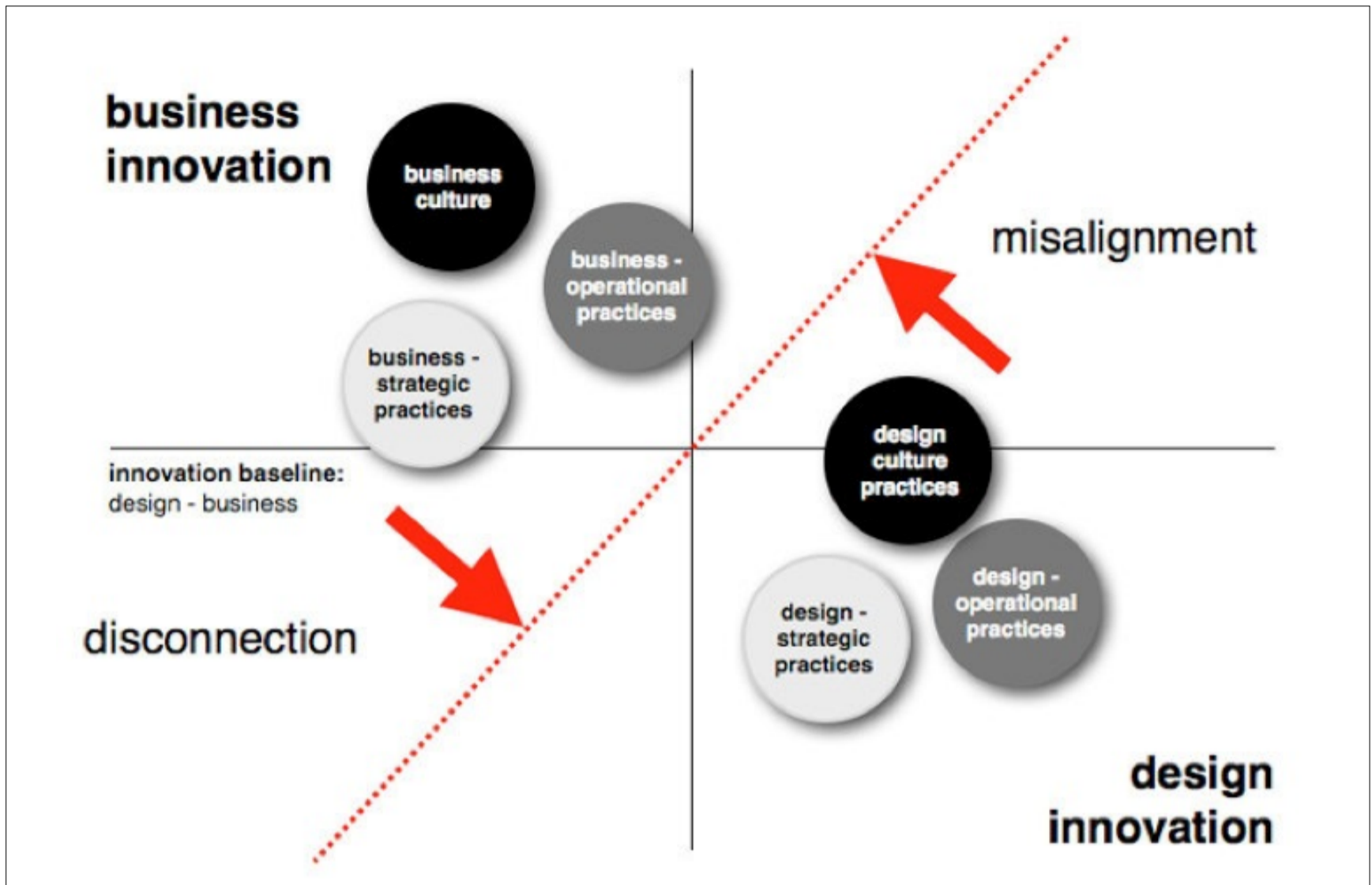


Diagram 4: Key 'disconnection factors'

If it is to be possible to improve (for mutual benefit) future interactions between the design and business communities in the UK, the key 'disconnection factors' that require attention relate to current cultural, strategic and operational practices (see Diagram 4).

Re-alignment and Re-connection

In order to facilitate the reconnection and realignment of design processes within the business development game (see Diagram 5) we believe that there is a need for the development of an effective common vocabulary, the establishment of congruent cognitive frameworks, and the facilitation of change in cultural attitudes (among players in both camps) towards business and design relationships.

The starting point for change is education, in particular design and business education at graduate level. A radical approach must be pursued if we are to break down the current cultural barriers to the adoption of design processes within business. We advocate a five-step process, one that is predicated on the principles embodied within the business-design innovation model (Bolton, 2010) set out in Diagram 6. Here we see that design and business need each other: on one hand, where

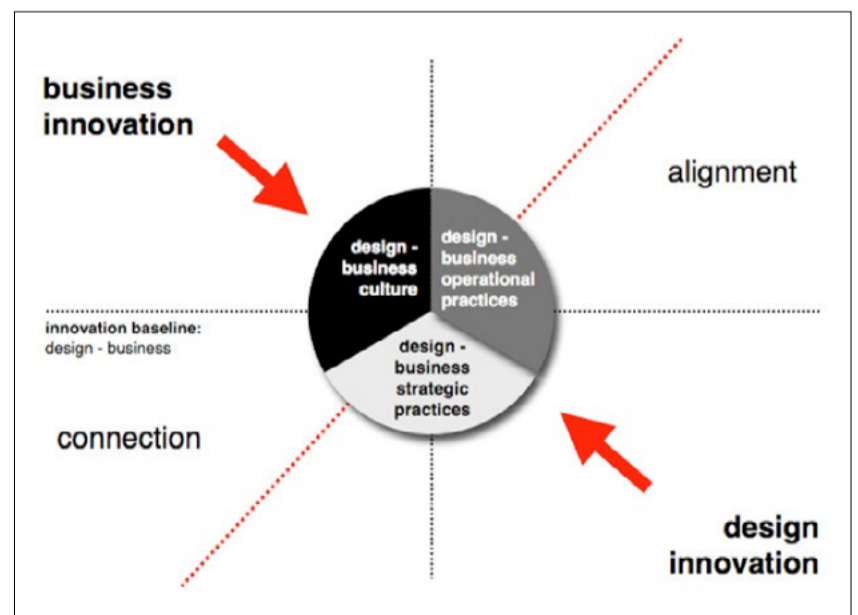


Diagram 5: Connection and alignment in the design-business relationship

businesses foster a strong relationship with designers—one that is built on mutual trust and understanding—they are investing in the development of a platform for the generation of multiple solutions. This menu of solutions will provide for them the possibility of broader and more intelligent strategic choice. On the other hand,

designers need challenges with which to work—these challenges are provided by the evolution of business objectives within competitive and innovation-intensive business environments. In short, designers work with business objectives to create a range of solutions from which businesses can strategically select. Whilst the mutual benefits are clear, moving towards mutual understanding has been less clear-cut. Our five steps might assist here:

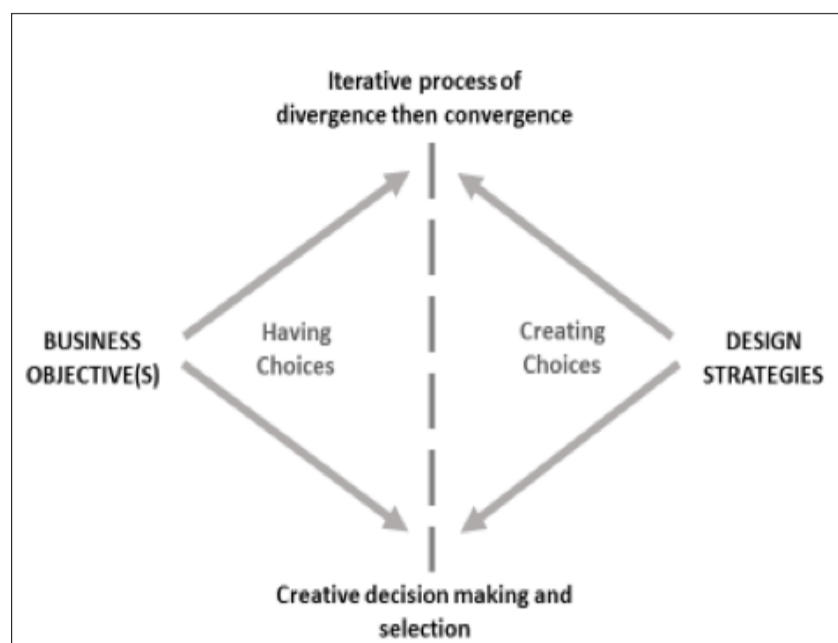


Diagram 6: Business-design innovation model

Step 1 a focus on avoidance of the use of the word *design*. We propose a move towards acceptance (or at least discussion) of a new vocabulary wherein ‘opportunity development’ might replace the term ‘design’ in a common meta-language. It is our experience that greater common ground can be established in the design–business space where the notion of *opportunity development* is mobilized in favor of *design*: all commercial organizations realize that they need to identify and develop opportunities in order to sustain their business (and public agencies seize on opportunity development as a means of leveraging service improvements and efficiency gains).

Step 2 promotion of greater use of design *thinking*—at a strategic level— as a tool for the identification and translation of business opportunities. As *design thinking* should be embedded into business school activities, so too *business thinking* needs to be at the heart of the design school curriculum. The aim here is to focus on strategic development of opportunities (understanding and promoting the fundamental interrelationships between the design and business disciplines in this process), in order that graduates will be equipped to foster and lead innovation in the organizations that employ them.

Step 3 development of a *Congruent Cognitive Framework* that will serve as a departure point for both graduate design and busi-

ness school teaching: here the aim is to provide insight into and mutual appreciation of: (1) design-business cultures (i.e., attitudes and behaviors); (2) design-business operational practices (activities and constraints); and (3) design-business strategic practices (roles, goals, drivers and actions). It is also envisaged that the *framework* will provide a reference point for potential graduate managers.

Step 4 introduction (into both design and business schools) of greater emphasis on practice-based, co-operative and synergistic approaches to problem solving and opportunity development. The aim is to encourage graduates to creatively explore risk taking through experimentation. Such an approach will help to break down the *decision attitude* problems identified above, and assist in the development of designers that are comfortable and acquainted with collaboration-based and business-sensitive design.

Step 5 promotion of greater collaboration between (and the joint development of curriculum activities within) graduate business and design schools. Novel approaches to business and design school thinking are within reach and are required urgently if innovation capacity is to be enhanced and design is to find its true role in both innovation and opportunity development processes.

Conclusion

The positive role of design in innovation and competitiveness at firm, sector and national level is no longer seriously disputed. Indeed, commentators from the worlds of business, design and policy-making have lined-up in recent years to push for a greater recognition of the contribution of design to economic development, and for practical supports for the improved embedding of design approaches, tools and methodologies in innovation, product development and business strategizing processes. We argue that these are laudable aims, however, they are aims that could be hampered or undermined if the disconnections and misalignments between the two worlds of business and design are allowed to continue unchecked. Tackling disconnection is not an easy task. It is one that will require changes in cultures, attitudes and practices, and these changes must be underpinned by well-planned, progressive, practical (and widely accepted) steps. We argue that the most effective way of delivering the necessary change programme is via the graduate education system. If this system has been an unwitting source of and support for disconnecting factors, then it makes sense to tackle the disconnection at its root. By re-figuring business and design school curricula to ensure that students in both classes of institutions are encouraged to develop common and complementary understandings of key themes, it should be possible to ensure that design takes its rightful and central place at the heart of the innovation process.

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