Design Management in Luxury Automotive Organisations: An Integrative Review of Process, Governance, and Capability

Janmejay R Desai
Doctoral Scholar, GLS University

Dr. Isha Dave
Associate Professor, GLS University

Abstract

Design management in luxury automotive organisations sits at the intersection of several literatures that have developed largely in parallel: design management theory, new product development process research, cross-functional integration, design leadership, luxury brand management, and design value measurement. This paper integrates those literatures through a structured review of 61 sources, identified through searches of Web of Science, Scopus, ScienceDirect and Google Scholar covering 1990 to 2026 and through citation chasing, and screened against the inclusion and exclusion criteria in Section 2.3.

The synthesis organises findings across six domains and identifies three tensions that cut across them: structure against flexibility in process design, hierarchy against collaboration in decision authority, and heritage against innovation in brand stewardship. Each tension has been posed in the literature and none has been resolved in a design-intensive setting. Evidence bearing on all three comes predominantly from high-volume manufacturing and general consumer markets, leaving open whether established findings transfer to low-volume production with high brand-equity sensitivity.

The review makes a diagnostic contribution. It shows where the six literatures rest on incompatible assumptions, specifies what evidence would adjudicate each tension, and sets out research gaps together with the designs that would close them.

Key words: design management, luxury automotive, new product development, cross-functional integration, design value measurement

1. Introduction

Design management scholarship has developed across disciplinary boundaries with limited contact between its constituent streams. Process-oriented research (Cooper, 1990; Ulrich & Eppinger, 2015) developed largely in parallel with brand management scholarship (Aaker, 1996; Keller, 1993) and with organisational capability theory (Teece et al., 1997; Eisenhardt & Martin, 2000). Each stream addresses design, and each proceeds on assumptions the others do not share. Integrating them to explain effective design management in high-stakes, brand-sensitive environments remains an under-addressed theoretical challenge, and it is the task this review undertakes.

Design management in luxury automotive organisations represents a critical nexus between creative vision, brand identity, and commercial viability. As organisations navigate market dynamics characterised by technological disruption, evolving consumer preferences, and intensified global competition (D'Aveni, 1994; Teece et al., 1997), the effectiveness of design management practices bears directly on competitive advantage and brand differentiation (Borja de Mozota, 2003; Verganti, 2009). The luxury automotive sector provides a particularly rich context for examining design management because of its combination of high brand equity sensitivity (Kapferer & Bastien, 2012), long development cycles, substantial capital investments, and the necessity of balancing heritage with innovation (Karjalainen, 2007; Ranscombe et al., 2012).

Despite this strategic importance, the scholarly literature exhibits notable gaps. Most empirical studies treat either broader automotive design (Tovey, 2016; Tovey et al., 2003) or general luxury brand management (Okonkwo, 2007; Wiedmann et al., 2009), leaving the intersection of design process mechanics, organisational governance, and luxury brand stewardship underexamined. Theoretical frameworks advanced by Cooper and Press (1995), Borja de Mozota

(2003), and Verganti (2009) provide conceptual foundations, but their application to the organisational realities of luxury automotive organisations has received limited systematic attention.

This review integrates scholarship across six thematic domains and asks three questions. First, where do the findings of these separate literatures conflict when brought into contact? Second, which conflicts are artefacts of differing research contexts, and which reflect genuine theoretical disagreement? Third, what evidence would be required to settle the disagreements that remain?

The review is organised as follows. Section 2 sets out the review methodology, including search strategy, inclusion criteria, and the derivation of the thematic structure. Section 3 synthesises the literature across the six domains. Section 4 identifies cross-cutting tensions and specifies research gaps. Section 5 proposes an integrative reading of the six domains and concludes.

2. Review Methodology

2.1 Review type

This review follows an integrative approach (Torraco, 2005; Snyder, 2019), appropriate where a topic has been addressed across literatures that developed independently and where the aim is a new conceptualisation rather than an effect estimate. A systematic review in the Cochrane sense is not feasible here: the constituent literatures use incompatible designs, units of analysis, and outcome measures, so statistical pooling is not possible. The review is therefore structured and transparent in its search procedure, and interpretive in its synthesis. The search and screening are reported in the manner of PRISMA 2020 (Page et al., 2021), adapted for an integrative review.

2.2 Search strategy

Searches were run in Web of Science, Scopus, ScienceDirect and Google Scholar covering 1990 to 2026. The date range begins in 1990 because Cooper's (1990) stage-gate paper anchors the process literature on which the review builds. Hambrick and Mason (1984), Eisenhardt and Bourgeois (1988), and Star and Griesemer (1989) fall before that date and entered through citation chasing.

The Web of Science search used the following string, with a timespan of 1990 to 2026.

> (TS=("design management" OR "design leadership" OR "design strategy" OR "design capabilit*") AND TS=(automotive OR automobile* OR "new product development" OR "product development") AND TS=(luxury OR premium OR "brand equity" OR heritage)) OR (TS=("design management" OR "design thinking" OR "design-driven") AND TS=("stage-gate" OR "stage gate" OR "front end" OR "development process")) OR (TS=("cross-functional" OR "cross functional") AND TS=("product development") AND TS=(design OR designer*)) OR (TS=("design leader*" OR "chief design officer" OR "design director") AND TS=(automotive OR "product development")) OR (TS=("brand identity" OR "brand heritage" OR "brand recognition") AND TS=(automotive OR vehicle* OR car) AND TS=(design OR styling)) OR (TS=("design value" OR "design effectiveness" OR "design investment") AND TS=(performance OR "brand equity"))

Scopus was searched using the following string:

> (TITLE-ABS-KEY(("design management" OR "design leadership" OR "design strategy" OR "design capabilit*") AND (automotive OR automobile* OR "new product development" OR "product development") AND (luxury OR premium OR "brand equity" OR heritage)) OR TITLE-ABS-KEY(("design management" OR "design thinking" OR "design-driven") AND ("stage-gate" OR "stage gate" OR "front end" OR "development process")) OR TITLE-ABS-KEY(("cross-functional" OR "cross functional") AND "product development" AND (design OR designer*)) OR TITLE-ABS-KEY(("design leader*" OR "chief design officer" OR "design director") AND (automotive OR "product development")) OR TITLE-ABS-KEY(("brand identity" OR "brand heritage" OR "brand recognition") AND (automotive OR vehicle* OR car) AND (design OR styling)) OR TITLE-ABS-KEY(("design value" OR "design effectiveness" OR "design investment") AND (performance OR "brand equity"))) AND PUBYEAR > 1989 AND PUBYEAR < 2027

ScienceDirect was searched using the field "Title, abstract or author-specified keywords" and the years 1990 to 2026. Six searches were run, one for each clause of the Web of Science string, and the results were merged. The searches were:

1. ("design management" OR "design leadership" OR "design strategy" OR "design capability") AND (automotive OR automobile OR "product development") AND (luxury OR premium OR "brand equity" OR heritage)
2. ("design management" OR "design thinking" OR "design-driven") AND ("stage-gate" OR "front end" OR "development process")
3. ("cross-functional" OR "cross functional") AND "product development" AND (design OR designer)
4. ("design leader" OR "chief design officer" OR "design director") AND (automotive OR "product development")
5. ("brand identity" OR "brand heritage" OR "brand recognition") AND (automotive OR vehicle OR car) AND (design OR styling)
6. ("design value" OR "design effectiveness" OR "design investment") AND (performance OR "brand equity")

Google Scholar was searched using the following queries:

1. ("design management" OR "design leadership" OR "design strategy" OR "design capability") (automotive OR automobile OR "product development") (luxury OR premium OR "brand equity" OR heritage)
2. ("design management" OR "design thinking" OR "design-driven") ("stage-gate" OR "front end" OR "development process")
3. ("cross-functional" OR "cross functional") "product development" (design OR designer)
4. ("design leader" OR "chief design officer" OR "design director") (automotive OR "product development")
5. ("brand identity" OR "brand heritage" OR "brand recognition") (automotive OR vehicle OR car) (design OR styling)
6. ("design value" OR "design effectiveness" OR "design investment") (performance OR "brand equity")

Backward and forward citation chasing on retained items supplemented the database searches. It identified 58 records. Nine could not be retrieved, 49 were assessed, and 16 of these were excluded, which left 33 included (Figure 1). Chasing started from the 28 sources retained from the database searches.

2.3 Inclusion and exclusion criteria

Included were peer-reviewed journal articles in English that address design management, design-led product development, or the role of design in brand formation, and that have a product-form dimension. The database searches covered 1990 to 2026. Books were admitted where they constitute field-defining contributions with no journal equivalent. Thirteen books met this test: Borja de Mozota (2003), Brown (2009), Bruce and Bessant (2002), Clark and Fujimoto (1991), Cooper and Press (1995), Kapferer and Bastien (2012), Martin (2009), Okonkwo (2007), Tovey (2016), Utterback et al. (2006), Verganti (2009), Walsh et al. (1992), and Wheelwright and Clark (1992). One article from a practitioner-oriented journal, Borja de Mozota (2006), was admitted as an exception because it is the one design-specific proposal for measuring design capability in the corpus.

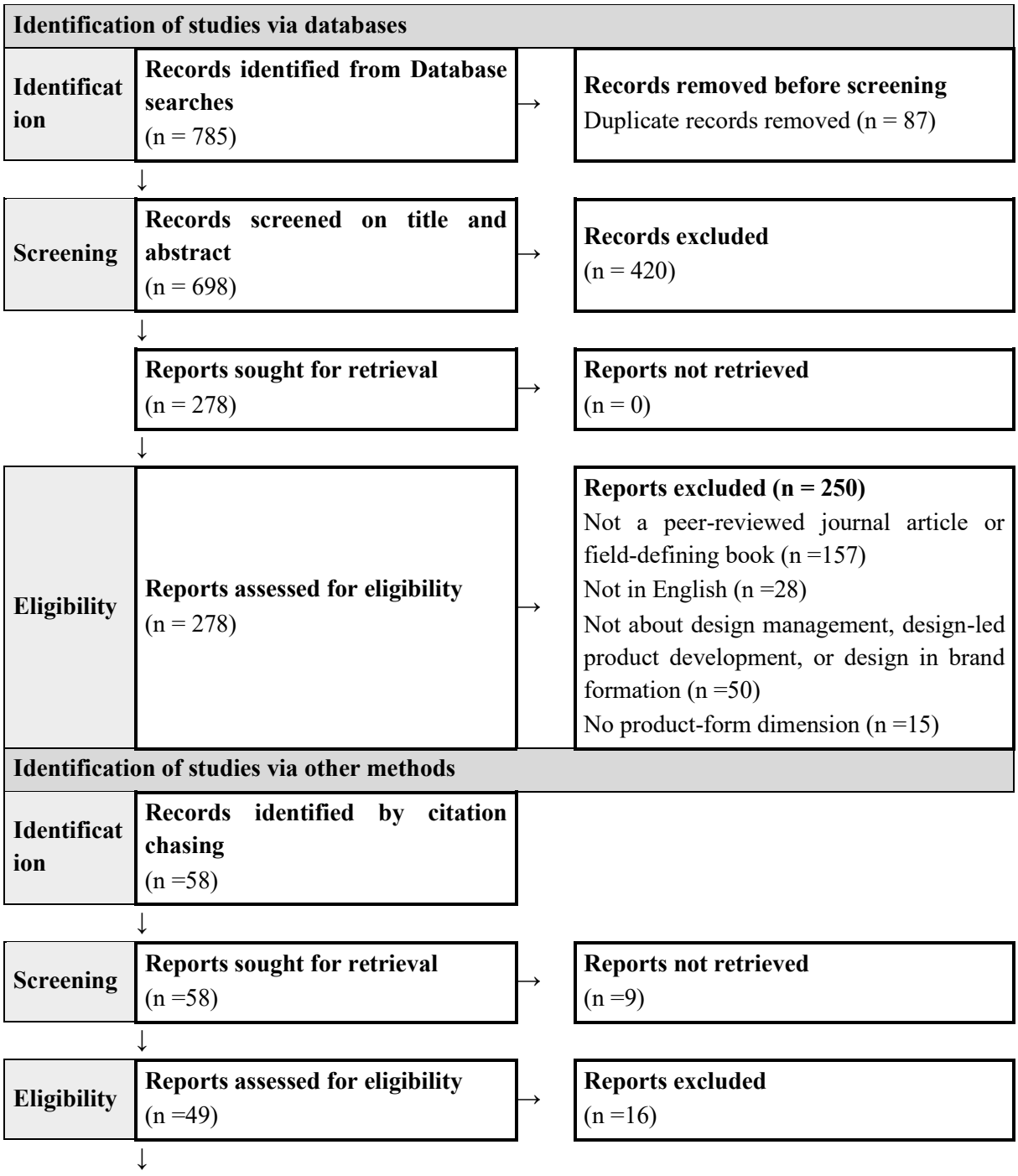
Excluded were practitioner magazines, conference abstracts without an accompanying full paper, and studies of design in contexts with no product-form dimension.

Seven works on organisational and brand theory (Aaker, 1996; Argote, 2013; D'Aveni, 1994; Dosi et al., 2000; Hutchins, 1995; Kaplan & Norton, 1996; Ulrich & Eppinger, 2015) are cited to frame concepts. Five further works are cited for review methodology (Braun & Clarke, 2019, 2021; Page et al., 2021; Snyder, 2019; Torraco, 2005). Neither group was screened, and neither forms part of the reviewed corpus.

2.4 Screening outcome

The database searches returned 785 records. After 87 duplicates were removed, 698 records were screened on title and abstract and 420 were excluded. The remaining 278 reports were all retrieved and assessed at full text, and 250 were excluded for the reasons shown in Figure 1, which left 28 sources from the database searches. Citation chasing added 33 sources, so 61 sources were included in the review. Figure 1 shows the flow of sources, adapted from PRISMA 2020 (Page et al., 2021).

Figure 1: PRISMA Flow Diagram



Included	**Sources included from citation chasing** (n = 33)
Total sources included in the review (n = 61)	

2.5 Thematic derivation

The thematic structure was developed iteratively during engagement with the literature rather than imposed in advance or derived through formal coding. Themes formed through repeated reading as recurring concerns became apparent across sources, were revised as further literature was retrieved, and stabilised at six domains when additional sources ceased to introduce concerns the existing structure could not accommodate.

This procedure is consistent with integrative review practice (Torraco, 2005; Snyder, 2019), where the synthesis is interpretive and the reviewer's engagement with the material is the analytic instrument. It follows the logic of reflexive thematic analysis (Braun & Clarke, 2019, 2021), in which themes are understood as constructed through the researcher's sustained engagement rather than discovered in the data, and in which coder agreement is not treated as a validity criterion.

2.6 Limitations of the review

The corpus is drawn overwhelmingly from Western European and North American research settings, which bounds the transferability of the synthesis. The searches covered 1990 to 2026, and recent developments in vehicle electrification, software-defined vehicle architecture, and the entry of non-Western luxury manufacturers are underrepresented in the evidence base. Structural findings on cross-functional integration derive predominantly from high-volume manufacturers, a limitation examined directly in Section 3.3.

Three further limitations concern sources. Only English-language sources were included, and the books entered through citation chasing. Chasing also supplied more of the corpus than the database searches did, 33 sources against 28. The imbalance reflects terminology applied inconsistently across the field, a problem examined in Section 3.1, and it leaves the corpus dependent in part on the reference lists of the sources retrieved first. One retained source, Borja de Mozota (2006), appeared in Design Management Review, a practitioner-oriented journal, and was admitted as an exception because it is the one design-specific proposal for measuring design capability in the corpus. The review treats its balanced scorecard as a proposal, and it carries less evidential weight than the peer-reviewed empirical studies.

3. Thematic Literature Synthesis

The following subsections synthesise scholarship across six thematic domains. Each aims to establish not only what the literature reports but where its findings diverge, and whether divergence reflects differing research contexts or genuine theoretical disagreement.

3.1 Design Management Frameworks: From Operational to Strategic Conceptions

Design management scholarship has moved from early operational emphases towards strategic conceptualisation of design as organisational capability and competitive resource (Borja de Mozota, 2003; Bruce & Bessant, 2002). Cooper and Press (1995) established a foundational understanding of design management as the coordination of design resources to achieve organisational objectives, foregrounding managerial dimensions of what had previously been treated as a purely creative endeavour. This operational framing proved insufficient to capture design’s role in product differentiation and brand formation (Utterback et al., 2006; Borja de Mozota, 2006).

Borja de Mozota (2003) positioned design management across three nested levels — operational, functional, and strategic — a tripartite model widely adopted in subsequent work (Chiva & Alegre, 2009; Deserti & Rizzo, 2014). At

the strategic level, design functions as an organisational differentiator shaping market positioning, corporate identity, and long-term competitive advantage (Ravasi & Lojacono, 2005). Ravasi and Lojacono's (2005) longitudinal case analysis of Italian design-intensive firms indicates that strategic design management enables firms to sustain distinctiveness as product categories commoditise.

Contemporary frameworks have emphasised design's systemic organisational role, though they divide sharply on where design's value originates. Martin (2009) positions design thinking as a general business capability, arguing that design-oriented organisations navigate uncertainty more effectively. Liedtka (2015) proposes a mechanism for this advantage, arguing that design thinking reduces cognitive bias towards incremental solutions and thereby widens the solution space a team explores. The claim is a theoretical proposition rather than a tested finding; Liedtka's contribution is a perspective essay, and the mechanism it specifies has not been isolated empirically.

Verganti (2009, 2011) advances an incompatible position. Design-driven innovation, on his account, originates in radical changes to what products mean, and such changes come from interpreters working at a distance from expressed user demand. Verganti's argument is explicitly a critique of user-centred method: asking users what they want, he holds, yields incremental outcomes by construction. Verganti and Öberg (2013) develop the point further, describing interpretive capabilities through which firms anticipate and shape market meaning. Design thinking, as Martin and Liedtka present it, places user understanding at the centre of the process. The two positions cannot both be right about where radical design value originates, and the design management literature has largely declined to adjudicate between them.

Subsequent scholarship has questioned whether design thinking is coherent enough to test. Micheli et al. (2019) reviewed the construct across the innovation literature and found its defining attributes specified inconsistently from study to study. Carlgren, Rauth and Elmquist (2016) documented substantial variation in how firms enact design thinking under a shared label. Kimbell (2011) argues that the concept rests on an unexamined distinction between designers and non-designers, which obscures rather than explains where design capability resides. Taken together, these critiques suggest that the empirical base for design thinking's strategic claims is thinner than its citation frequency implies — a caution applying to any framework, including the present review's, that treats design capability as a measurable organisational property.

The dynamic capabilities perspective (Teece et al., 1997; Eisenhardt & Martin, 2000) offers a further lens. Teece et al. (1997) position competitive advantage as residing in the firm's ability to sense opportunities, seize them, and reconfigure resources — functions design management plausibly supports. The same logic extends to design knowledge held as organisational routine, which the capabilities literature treats as a durable asset difficult for competitors to replicate (Dosi et al., 2000).

Empirical work linking design investment to performance is more limited than its citation frequency suggests. Gemser and Leenders (2001) found that greater design involvement in product development correlated with superior innovation performance among Dutch furniture and precision instrument firms. Chiva and Alegre (2009) report a comparable association with design management as mediator. Both studies are correlational, both measure design emphasis largely by self-report, and neither can exclude the possibility that profitable firms invest in design because they can afford to. The direction of the relationship remains open.

3.2 Process Organisation and Stage-Gate Models

The organisation of design and product development processes has generated substantial scholarship since Cooper's (1990) Stage-Gate model, which formalised structured innovation progression through defined phases separated by decision checkpoints. Cooper (2008) subsequently incorporated spiral development and flexibility provisions in response to accumulated criticism that early formulations were too rigid to accommodate iterative creative work.

The evidence on structured development processes is more divided than the framework's adoption rate suggests. Against Cooper's position, Sethi and Iqbal (2008) found that strict adherence to stage-gate criteria degraded outcomes for novel products, and identified the mechanism as learning failure: gate criteria fixed early foreclose the reformulation that novel projects require, so teams proceed on assumptions the accumulating evidence no longer supports. Nobelius and Trygg

(2002) reached a compatible conclusion from a different direction, finding that front-end activities are poorly served by sequential architectures and require flexible entry and exit points.

These findings are reconcilable, and product novelty is the variable that reconciles them. Cooper's evidence base is weighted towards incremental and platform-extension development, where the solution space is bounded at the outset and gate criteria specified early remain valid throughout. Sethi and Iqbal's effect appears where novelty is high and early criteria become obsolete mid-project. The disagreement therefore concerns scope conditions rather than mechanism. Neither literature specifies those conditions explicitly, which is why the dispute persists.

This unresolved boundary matters directly for luxury automotive design. Development programmes in the sector routinely combine high aesthetic novelty with low technical novelty, since platforms, powertrains, and regulatory requirements are frequently carried over while form language is expected to advance. Existing evidence does not indicate which pole governs when the two diverge within a single programme, because the studies establishing the novelty moderator treated novelty as a project-level property rather than one varying by workstream.

Khurana and Rosenthal (1998) identify the fuzzy front end as the phase where the most consequential decisions are taken with the least formal support. Their holistic front-end model argues for aligning strategic context, product concept, and organisational commitment at early development stages rather than imposing sequential structure on an inherently parallel process. Perks, Cooper and Jones (2005) derived a taxonomy of design's roles across development projects, distinguishing design as functional specialism, as part of a multifunctional process, and as process leader. Their contribution is descriptive: it maps the configurations design occupies without testing which configuration produces better outcomes under which conditions.

Research specific to automotive design documents multi-phase development structures with iterative refinement within phases. Tovey (2016) describes concept exploration, feasibility assessment, detail refinement, and final approval as distinct but interpenetrating activities, with physical and digital modelling serving as integration points. Tovey et al. (2003) examine sketching and concept development as cognitive and communicative tools, finding that visual externalisation enables designers to explore solution spaces more effectively than verbal or abstract specification alone — consistent with distributed cognition accounts (Hutchins, 1995). Both studies describe British practice, both predate the electrification transition, and the sketching-and-clay workflow Tovey et al. document has since shifted substantially towards digital methods.

The effect of computational tools on design process organisation remains underexamined. Digital modelling permits earlier feasibility assessment, which the process literature treats as beneficial, while the fixation literature (Sio, Kotovsky & Cagan, 2015; Perttula & Sipilä, 2007) indicates that early exposure to concrete representations narrows subsequent exploration. No study located by this review tests these two effects against one another in a design-intensive development setting.

3.3 Cross-Functional Integration in Design-Intensive Organisations

Integration of design with engineering, marketing, and manufacturing is among the most consistent themes in design management and product development literature. Brown and Eisenhardt (1995) synthesise three decades of product development research to identify cross-functional communication and coordination among the most critical factors distinguishing high-performing from low-performing projects, and specify frequent communication, clear role definitions, and senior management oversight as structural enablers.

Wheelwright and Clark (1992) establish the distinction between lightweight, functional, and heavyweight team structures, finding that heavyweight teams with empowered project leaders and cross-functional authority outperform alternatives in development speed, quality, and strategic alignment. Griffin (1997), reporting PDMA benchmarking data, confirms cross-functional integration among the strongest predictors of development success across industries.

Structural mechanisms alone are insufficient. Dougherty (1992) demonstrates through case analysis that functional subcultures — the distinctive interpretive frameworks through which design, engineering, and marketing personnel understand their work — are a primary source of integration failure. Successful integration requires active management of interpretive differences across functional boundaries, a finding supported by Nakata and Im (2010). Dougherty's

mechanism carries an implication the literature has not pursued: integration difficulty should rise with the cultural distance between functions. Design and engineering in a luxury firm may sit further apart interpretively than marketing and engineering in a volume firm, which would make the effect stronger in precisely the setting least studied.

In automotive contexts, research emphasises the challenge of aligning aesthetic vision with technical feasibility and manufacturing constraint (Tovey et al., 2003). Clark and Fujimoto (1991), in their comparative study of automotive product development, argue that superior development performance depends on product integrity — the coherent integration of functional performance and design identity. Their concept applies directly to luxury automotive design, where design identity carries exceptional brand value that must be preserved through engineering and manufacturing integration.

The evidence supporting these structural prescriptions is drawn almost entirely from high-volume manufacturing. Clark and Fujimoto's (1991) study examined volume producers during the 1980s; Wheelwright and Clark's (1992) typology generalised from the same research programme; Griffin's (1997) benchmarking data are dominated by large manufacturers. The coordination problem these structures address — integrating specialised functions across organisations too large for informal alignment — is a function of scale.

Luxury automotive organisations frequently operate at a scale where that premise does not hold. Annual volumes in the tens of thousands, design teams numbering in the dozens, and long tenure among senior staff produce conditions under which informal coordination may substitute for formal integration structures. Whether heavyweight team architecture confers advantage at this scale, or imposes overhead on an organisation already integrated by other means, has not been examined. The question is not whether cross-functional integration matters, which is well established, but whether the structural mechanisms identified in volume manufacturing are the mechanisms producing it in small design-intensive organisations.

Prototypes and physical models function as integration mechanisms in a manner the boundary object literature explains. Star and Griesemer (1989) describe objects that are simultaneously legible to multiple communities of practice while retaining distinct meaning within each, enabling coordination without requiring shared interpretive frameworks. The full-size clay model in automotive design is a boundary object of unusual clarity: it is simultaneously an aesthetic proposal, an aerodynamic surface, a packaging check, and a manufacturing feasibility test, legible to four functions sharing no common vocabulary.

Table 1: Cross-Functional Integration Mechanisms and Their Theoretical Basis

Integration Mechanism	Primary Function	Theoretical Basis
Regular technical reviews	Systematic feasibility alignment between design and engineering	Clark & Fujimoto (1991); Wheelwright & Clark (1992)
Digital model exchange	Shared visualisation enabling multi-disciplinary assessment	Tovey (2016)
Cross-functional team participation	Embedding multiple perspectives in design decision-making	Brown & Eisenhardt (1995); Griffin (1997)
Progressive feasibility milestones	Structured convergence enabling creativity within constraints	Cooper (1990, 2008); Khurana & Rosenthal (1998)
Boundary objects (clay models, prototypes)	Cross-disciplinary communication without interpretive loss	Star & Griesemer (1989)

3.4 Design Leadership and Decision Authority

Design leadership literature addresses how design authority is distributed within organisations and the mechanisms through which design influences strategic decisions. Bruce and Bessant (2002) identify centralised versus distributed design authority as a fundamental organisational choice affecting both design outcomes and organisational dynamics.

A trade-off is widely assumed to follow from that choice: centralised authority is held to produce stylistic coherence at the cost of creative diversity, distributed authority the reverse. This review located no direct empirical test of the proposition in a design organisation. It can, however, be derived from adjacent findings. The fixation literature indicates that exposure to existing solutions narrows the range of subsequent output (Perttula & Sipilä, 2007; Sio et al., 2015), which predicts convergence where a single authority sets the reference. Amabile et al. (1996) find autonomy-supportive conditions the most consistent predictor of creative performance, which predicts greater variety where authority is dispersed. Dougherty (1992) indicates that dispersed authority across interpretive communities produces divergent output absent active reconciliation. The trade-off is therefore plausible as a derived proposition and unverified as a finding.

The role of senior design leadership in automotive organisations — variously titled Chief Design Officer, Design Director, or Head of Design — has received almost no peer-reviewed treatment. Practitioner and trade accounts describe the position as combining creative direction, quality gatekeeping, executive representation, and cross-functional coordination, but this review located no empirical study examining how these functions combine, how they are distributed where they are not held by a single person, or how variation in the role relates to design or business outcomes.

The absence is consequential because adjacent literatures predict the role should matter considerably. Upper echelon theory (Hambrick & Mason, 1984) holds that organisational outcomes reflect the cognitive frames and values of senior leaders, an effect that should intensify where decisions rest on judgment resistant to codification. Aesthetic judgment in luxury automotive design is such a decision class: its criteria are substantially tacit (Nonaka, 1994), the stakes for brand equity are high (Karjalainen, 2007), and no formal specification substitutes for the judgment itself. Upper echelon theory therefore predicts strong leader effects in precisely this setting, and the prediction has not been tested.

Johansson-Sköldberg, Woodilla and Çetinkaya (2013) document the evolution of design leadership discourse from individual creative direction towards organisational capability building. Their review also distinguishes designerly thinking, grounded in design practice and its scholarship, from design thinking as a management discourse, and is critical of how the latter travelled into business writing — a critique consistent with the concerns raised in Section 3.1.

Adler, Goldoftas and Levine (1999) identify meta-routines — second-order practices governing how primary routines are adapted — as a mechanism by which organisations sustain flexibility without abandoning structure. Design management scholarship has not applied the concept, though design review and approval practices appear to operate in this way: they govern how design development proceeds rather than performing design work themselves. Whether review structures function as meta-routines, and whether that framing predicts anything about their effectiveness, is unexamined.

Leadership style research provides further context. Amabile et al. (1996) demonstrate that autonomy-supportive leadership — goal-setting clarity combined with means flexibility — is the most consistent predictor of creative performance in organisational settings. Taggar (2002) finds that team-level creative performance depends on individual creative capacity combined with team processes enabling integration of diverse contributions. Both findings require qualification before transfer to this setting. Amabile et al. measured perceived work environment via the KEYS instrument with creativity assessed by self and supervisor report, a different construct from aesthetic quality in a design output judged against brand fit; Taggar's teams were undergraduate project groups. The autonomy findings are robust in their own domain, and their transfer to design-specific creative performance remains an assumption.

3.5 Brand Coherence and Identity Management in Luxury Automotive Design

Literature on luxury brand management emphasises design's role in maintaining brand identity and visual coherence across product portfolios. Kapferer and Bastien (2012) articulate the principle that the luxury brand defines the customer rather than the reverse, establishing design as the primary vehicle through which brand identity is expressed. Their

account is drawn from consulting practice rather than empirical research, and its central propositions are asserted rather than tested; it remains the standard reference in the field. Vigneron and Johnson (2004) provide empirical support for a related claim, developing a multidimensional model in which perceived quality, uniqueness, and social value — all substantially shaped by design — drive luxury brand equity.

Keller's (1993) customer-based brand equity framework positions visual identity as a critical brand asset requiring systematic management, a position consistent with the wider brand equity literature (Aaker, 1996). In automotive contexts, design elements function as particularly powerful brand equity carriers because they are directly observable in everyday use, creating repeated exposure that reinforces identity associations (Karjalainen, 2007). Karjalainen (2007) demonstrates through systematic visual analysis that automotive design elements function as reliable brand identifiers.

Ranscombe, Hicks, Mullineux and Singh (2012) investigate how aesthetic features influence brand perception through systematic decomposition of vehicle images, finding that both specific elements — grilles, headlights, silhouette proportions — and overall gestalt function as brand identity cues with differentiated salience. Two limitations bear on the present application. Their method measured recognition at a single point in time and cannot address how far a feature may be transformed before recognition fails. Their stimulus set also predates vehicle electrification, which has removed the grille as a functional necessity across much of the market. Two of the strongest identifiers in their data are consequently now styling choices rather than engineering requirements, and whether brand identification survives that shift is an open question of immediate commercial relevance.

The tension between heritage consistency and innovation-driven evolution has been examined by several scholars. Urde, Greyser and Balmer (2007) develop the corporate heritage brand framework, arguing that heritage brands must manage a dynamic tension between continuity and adaptive renewal. Beverland (2005) demonstrates through case analysis that successful heritage brands treat tradition as a resource for innovation, constructing new products as extensions of the brand's historical narrative. Wiedmann, Hennigs and Siebels (2009) find heritage authenticity a primary driver of luxury consumption, placing organisational pressure on design management to maintain recognisable continuity while pursuing stylistic evolution.

The literature offers two incompatible accounts of how brand identity persists. Design language systems treat identity as codified specification — a documented set of formal elements reproducible across products and transmissible to new personnel (Karjalainen, 2007). Balmer (2013) advances a different account, treating corporate brand identity as an ongoing organisational narrative continuously reinterpreted rather than a fixed specification. The two accounts imply different transmission mechanisms and different failure modes. Codified identity fails through mechanical repetition producing stale output; narrative identity fails through drift when interpretive authority is dispersed or lost.

Neither account has been tested against the other in a design organisation, and the knowledge management literature suggests neither is complete. Nonaka's (1994) distinction between explicit and tacit knowledge implies that codified design language captures only what can be articulated, while the judgment determining whether a new form reads as authentic to a brand remains tacit and transmits through apprenticeship rather than documentation. If that is correct, design language systems are necessary and structurally insufficient, and the sufficiency gap is filled by individuals — which returns the question to the design leadership literature and its documented silence (Section 3.4).

3.6 Measurement and Evaluation of Design Value

Design value measurement remains contested, with ongoing debate regarding appropriate metrics, evaluation frameworks, and the temporal dimensions of design's contribution. Hertenstein, Platt and Veryzer (2005) provide the field's principal empirical analysis, finding that firms rated design-effective by industry experts outperform matched comparison firms on multiple financial indicators. Two limitations qualify the finding. The authors acknowledge that financial metrics capture only a subset of design's contribution and may undervalue long-term brand building. The independent variable also derives from expert panel judgment, so the result partly reports that experts rate commercially successful firms as well designed, and halo effects are difficult to exclude.

The limitations of purely financial evaluation prompted broader measurement frameworks. Borja de Mozota (2006) proposes a balanced scorecard approach integrating financial performance, customer value creation, internal process efficiency, and organisational learning, adapting Kaplan and Norton's (1996) methodology to design management.

Walsh et al. (1992) demonstrate in one of the earliest systematic studies that design investment by UK manufacturers correlated with competitive performance. Creusen and Schoormans (2005) show that product appearance serves multiple consumer evaluation functions simultaneously — conveying quality signals, expressing aesthetic values, facilitating categorisation, and communicating brand identity — each contributing to brand equity through distinct mechanisms.

Design value measurement remains fragmented across three literatures that have not been reconciled. Financial approaches (Hertenstein et al., 2005; Walsh et al., 1992) demonstrate association between design effectiveness and firm performance but cannot isolate direction. Brand equity approaches (Keller, 1993; Karjalainen, 2007) capture design's contribution to identity and recognition without connecting it to financial return. Capability approaches propose balanced measurement across learning and process dimensions but supply no validated instrument (Borja de Mozota, 2006).

The three operate on different time horizons, which explains why integration has proved difficult rather than merely neglected. Financial metrics resolve within reporting periods; brand equity accumulates across product generations; capability development runs longer still. A firm optimising against any one horizon may degrade performance on the others, and no framework specifies how organisations should weigh them. How firms actually construct, deploy, and act on design performance data is unexamined.

4. Cross-Cutting Tensions and Research Gaps

The thematic synthesis reveals three tensions cutting across scholarly domains. Each has been posed in the literature; none has been resolved in a design-intensive setting. Each subsection below states the tension, identifies what remains unsettled, and specifies what evidence would settle it.

4.1 Structure Versus Flexibility

The most fundamental tension concerns the relationship between organisational structure and creative flexibility. Stage-gate models (Cooper, 1990, 2008) emphasise structure; design thinking approaches (Martin, 2009; Brown, 2009) emphasise flexibility. March's (1991) analysis of the exploration–exploitation trade-off provides the underlying framework: exploitation and exploration require different organisational conditions and compete for resources and attention.

Adler and Borys (1996) establish that formalisation is not uniformly constraining, distinguishing enabling bureaucracies — formal structures designed to support skilled judgment — from coercive bureaucracies that constrain discretion. Sheremata (2000) develops a related account of centrifugal and centripetal forces, arguing that effective development organisations must simultaneously enable divergent exploration and enforce convergent integration.

What Adler and Borys do not supply is a criterion for distinguishing the two forms in advance. Enabling and coercive bureaucracy are identified by their effects, which means the distinction explains outcomes retrospectively without predicting them. Applied to design development, the unresolved question is which properties of a review structure make it enabling. Candidate variables are identifiable from the surrounding literature — who sets gate criteria, whether criteria can be revised mid-project, whether reviews evaluate work or redirect it, and whether authority exists to reopen a settled decision. None has been tested. Resolving this would require observation of review practice across projects varying in these properties, with design outcomes assessed independently of the process that produced them.

The novelty moderator identified in Section 3.2 gives this tension a specific form in luxury automotive settings. Programmes there routinely combine high aesthetic novelty with low technical novelty, while the process literature treats novelty as a project-level property. Which pole governs when the two diverge within one programme is unaddressed.

4.2 Hierarchy Versus Collaboration in Decision Authority

The relationship between hierarchical decision authority and collaborative organisational culture represents a second persistent tension. Centralised authority is held to enable design coherence and brand consistency while risking suppression of contribution from experienced designers (Amabile et al., 1996); distributed authority is held to enable contribution and cross-functional buy-in while risking incoherence and brand dilution (Karjalainen, 2007).

A hybrid — formal authority concentrated at senior levels combined with extensive lateral consultation — is frequently proposed as the resolution. The empirical record complicates this. Eisenhardt and Bourgeois (1988) found that centralised power in high-velocity environments generated political behaviour that degraded decision quality, with executives forming coalitions and withholding information. Their evidence runs against the proposition that concentrated authority combined with consultation produces informed decisions. Where a hybrid of this kind is claimed to work, the burden falls on explaining why the political dynamics they documented do not arise.

One candidate explanation concerns the basis of authority. In their sample, executive authority derived from position. In design organisations, senior authority typically derives from demonstrated aesthetic judgment accumulated over a career, which may be accepted as legitimate by subordinates in a way positional authority is not. If legitimacy differs, political contestation may differ. This is a proposition rather than a finding: no study has examined whether expertise-based authority in creative organisations produces the political dynamics associated with positional authority.

The tension cannot be resolved while the role at its centre remains undocumented. Section 3.4 established that senior design leadership has received almost no empirical treatment, which means the mechanism through which hierarchical authority is exercised in design organisations is itself unknown. Upper echelon theory (Hambrick & Mason, 1984) predicts that individual leader characteristics should matter substantially here, with implications for succession planning that the literature has not addressed.

4.3 Heritage Versus Innovation in Brand Management

The tension between heritage preservation and contemporary innovation represents a third cross-cutting theme. Urde et al. (2007) identify this as the defining challenge of heritage brand stewardship: organisations must maintain brand continuity while adaptively renewing brand expressions. Beverland (2005) documents one resolution, in which tradition is treated as a resource for innovation rather than a constraint upon it.

Gioia, Schultz and Corley (2000) describe adaptive instability, in which surface changes to identity expression preserve deeper structural continuity. The framework does not specify where the boundary between surface and deep sits, and in design that boundary is the entire practical question. Which formal elements a brand may change without ceasing to be recognisable is decided repeatedly in design organisations and has no theoretical account.

Ranscombe et al. (2012) establish that identification loads unevenly across features, implying the boundary is empirically discoverable rather than arbitrary. Their cross-sectional method cannot address how far a feature may be transformed before recognition fails. Longitudinal analysis tracking specific design elements across product generations, paired with recognition testing, would begin to answer this. Vehicle electrification supplies an unplanned natural experiment: the grille has lost its cooling function while retaining its identity load, and the industry is currently resolving in practice a question the literature has not posed.

Organisational memory (Argote, 2013) and tacit knowledge transmission (Nonaka, 1994) are implicated in any account of how continuity is maintained across generations of personnel, and neither has been systematically incorporated into brand management theory.

4.4 Research Gaps

The synthesis and tension analysis identify five gaps warranting investigation. Each is stated with the current state of evidence and a design capable of addressing it.

Research Gap	Current State of Literature	Design Required
Senior design leadership as an organisational role	No peer-reviewed empirical treatment located. Upper echelon theory (Hambrick & Mason, 1984) predicts strong effects in judgment-intensive decision classes	In-depth interview study with senior design leaders across organisations, examining how creative direction, gatekeeping, and integration functions combine and are distributed

Research Gap	Current State of Literature	Design Required
Enabling versus coercive review structures	Distinction established by Adler & Borys (1996) but identified only by effects; no predictive criterion	Comparative observation of review practice across projects varying in criteria-setting authority and revisability, with outcomes assessed independently of process
Scale boundary on integration findings	Structural findings derive from high-volume manufacturers (Clark & Fujimoto, 1991; Griffin, 1997); transfer to small design organisations untested	Matched comparison of integration mechanisms across organisations differing in scale but comparable in product complexity
Novelty as a workstream-level property	Novelty moderator established at project level (Sethi & Iqbal, 2008); programmes combining high aesthetic and low technical novelty unaddressed	Process-level study of programmes where aesthetic and technical novelty diverge, examining which governs process design
Reconciliation of design value measures	Financial, brand equity, and capability approaches developed separately on incompatible time horizons	Mixed-methods study of how organisations construct, weight, and act on design performance data across horizons

5. Towards an Integrative Reading, and Conclusion

5.1 The domains are not independent

The three tensions identified above each cut across several of the six domains reviewed, which indicates the domains interact rather than partition the field. The structure–flexibility tension surfaces in process research (Cooper, 1990; Sethi & Iqbal, 2008), in leadership research through the autonomy findings (Amabile et al., 1996), and in capability research through the question of what review practice teaches an organisation. The hierarchy–collaboration tension appears in integration research (Wheelwright & Clark, 1992), in leadership research (Eisenhardt & Bourgeois, 1988), and in brand research wherever interpretive authority over identity is at issue (Balmer, 2013). The heritage–innovation tension spans brand management (Urde et al., 2007), process organisation, and measurement, since the horizon over which heritage value accrues differs from the horizon on which projects are assessed.

Existing frameworks treat the domains as separable. Borja de Mozota's (2003) operational, functional, and strategic levels distinguish design management by scope of application rather than by interacting mechanism, so a tension arising between two domains has no place in the scheme. The tensions documented here suggest that a framework organised around interaction would locate problems the level-based framework cannot express.

5.2 Three dimensions as an organising lens

This review therefore proposes reading the six domains as three interacting dimensions. Process architecture covers phase structure, review mechanisms, and how constraints enter development. Organisational governance covers decision authority, integration structures, and stewardship of brand identity. Capability development covers talent, learning from completed projects, and how design performance is assessed.

The grouping is offered as an organising lens rather than a validated model, and it makes no claim to have resolved anything. Its use is diagnostic. Each tension identified above sits at the intersection of two dimensions — structure and flexibility between process architecture and capability development, hierarchy and collaboration between governance

and capability development, heritage and innovation between governance and process architecture. That positioning predicts that studies examining one dimension in isolation will continue to reproduce the disagreements documented in Section 4, which is consistent with what this review found.

5.3 Questions arising

The review identifies gaps that an interview study with senior design practitioners is positioned to address. Four questions follow.

RQ1. How is the senior design leadership role constituted in luxury automotive organisations, and how are its creative direction, quality gatekeeping, executive representation, and integration functions combined or distributed?

Section 3.4 established that this role has received almost no peer-reviewed treatment despite adjacent theory predicting it should matter substantially. The question is descriptive and foundational: the role must be documented before its effects can be examined.

RQ2. What properties distinguish design review structures that practitioners experience as supporting their judgment from those experienced as constraining it?

Adler and Borys (1996) distinguish enabling from coercive bureaucracy by its effects, without supplying a criterion identifiable in advance (Section 4.1). Practitioners who have worked under multiple review regimes are positioned to articulate the difference from the inside, which is where a predictive criterion would have to come from.

RQ3. On what basis is senior design authority accepted as legitimate, and how does that basis shape how decisions are contested?

Eisenhardt and Bourgeois (1988) found that concentrated authority generated political behaviour degrading decision quality (Section 4.2). Section 4.2 proposed that authority grounded in demonstrated aesthetic judgment may operate differently from positional authority. The proposition concerns how legitimacy is understood by those subject to it, which interviews can address and structural measures cannot.

RQ4. How do practitioners distinguish design elements a brand may change from those it may not, and what governs that judgment where it is not codified?

Gioia, Schultz and Corley (2000) locate identity continuity beneath surface change without specifying where that boundary falls (Section 4.3). Section 3.5 set out two incompatible accounts of how the boundary is held, one treating brand identity as codified specification and the other as continuous reinterpretation. Designers decide the question on every programme, and neither account records the criteria they apply, so the practitioners who apply them are the only available source.

5.4 Conclusion

This review integrated scholarship across six domains that have developed with limited contact. The synthesis found a substantial body of relevant theory and a set of disagreements the literature has not settled: whether design value originates in user understanding or in interpretation away from users; whether structured development processes help or harm work of high aesthetic novelty; whether integration mechanisms established in volume manufacturing transfer to small design organisations; and where the boundary sits between design elements a brand may change and those it may not.

Senior design leadership emerged as the clearest absence. Upper echelon theory predicts strong leader effects where decisions rest on judgment resistant to codification, and aesthetic judgment under brand constraint is such a decision class. No empirical study located here examines how the role combines its functions or how variation in it relates to outcomes. Closing that gap requires access to senior design practitioners and a method suited to eliciting tacit judgment, which sets the agenda for the interview study proposed in Section 5.3.

References

Aaker, D. A. (1996). Building Strong Brands. New York: Free Press.

Adler, P. S., & Borys, B. (1996). Two types of bureaucracy: Enabling and coercive. Administrative Science Quarterly, 41(1), 61–89.

Adler, P. S., Goldoftas, B., & Levine, D. I. (1999). Flexibility versus efficiency? A case study of model changeovers in the Toyota production system. Organization Science, 10(1), 43–68.

Amabile, T. M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the work environment for creativity. Academy of Management Journal, 39(5), 1154–1184.

Argote, L. (2013). Organizational Learning: Creating, Retaining and Transferring Knowledge (2nd ed.). New York: Springer.

Balmer, J. M. T. (2013). Corporate heritage, corporate heritage marketing, and total corporate heritage communications. European Journal of Marketing, 47(9/10), 1482–1524.

Beverland, M. B. (2005). Crafting brand authenticity: The case of luxury wines. Journal of Management Studies, 42(5), 1003–1029.

Borja de Mozota, B. (2003). Design Management: Using Design to Build Brand Value and Corporate Innovation. New York: Allworth Press.

Borja de Mozota, B. (2006). The four powers of design: A value model in design management. Design Management Review, 17(2), 44–53.

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. Qualitative Research in Sport, Exercise and Health, 11(4), 589–597.

Braun, V., & Clarke, V. (2021). One size fits all? What counts as quality practice in (reflexive) thematic analysis? Qualitative Research in Psychology, 18(3), 328–352.

Brown, S. L., & Eisenhardt, K. M. (1995). Product development: Past research, present findings, and future directions. Academy of Management Review, 20(2), 343–378.

Brown, T. (2009). Change by Design. New York: HarperBusiness.

Bruce, M., & Bessant, J. (2002). Design in Business: Strategic Innovation Through Design. London: Financial Times/Prentice Hall.

Carlgren, L., Rauth, I., & Elmquist, M. (2016). Framing design thinking: The concept in idea and enactment. Creativity and Innovation Management, 25(1), 38–57.

Chiva, R., & Alegre, J. (2009). Investment in design and firm performance: The mediating role of design management. Journal of Product Innovation Management, 26(4), 424–440.

Clark, K. B., & Fujimoto, T. (1991). Product Development Performance: Strategy, Organization, and Management in the World Auto Industry. Boston: Harvard Business School Press.

Cooper, R. G. (1990). Stage-gate systems: A new tool for managing new products. Business Horizons, 33(3), 44–54.

Cooper, R. G. (2008). Perspective: The Stage-Gate® idea-to-launch process — update, what's new, and NexGen systems. Journal of Product Innovation Management, 25(3), 213–232.

Cooper, R., & Press, M. (1995). The Design Agenda: A Guide to Successful Design Management. Chichester: John Wiley & Sons.

Creusen, M. E. H., & Schoormans, J. P. L. (2005). The different roles of product appearance in consumer choice. Journal of Product Innovation Management, 22(1), 63–81.

D'Aveni, R. (1994). Hypercompetition: Managing the Dynamics of Strategic Maneuvering. New York: Free Press.

Deserti, A., & Rizzo, F. (2014). Design and the cultures of enterprises. Design Issues, 30(1), 36–56.

Dosi, G., Nelson, R., & Winter, S. (Eds.). (2000). The Nature and Dynamics of Organizational Capabilities. Oxford: Oxford University Press.

Dougherty, D. (1992). Interpretive barriers to successful product innovation in large firms. Organization Science, 3(2), 179–202.

Eisenhardt, K. M., & Bourgeois, L. J. (1988). Politics of strategic decision making in high-velocity environments: Toward a midrange theory. Academy of Management Journal, 31(4), 737–770.

Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: What are they? Strategic Management Journal, 21(10/11), 1105–1121.

Gemser, G., & Leenders, M. A. A. M. (2001). How integrating industrial design in the product development process impacts on company performance. Journal of Product Innovation Management, 18(1), 28–38.

Gioia, D. A., Schultz, M., & Corley, K. G. (2000). Organizational identity, image, and adaptive instability. Academy of Management Review, 25(1), 63–81.

Griffin, A. (1997). PDMA research on new product development practices: Updating trends and benchmarking best practices. Journal of Product Innovation Management, 14(6), 429–458.

Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. Academy of Management Review, 9(2), 193–206.

Hertenstein, J. H., Platt, M. B., & Veryzer, R. W. (2005). The impact of industrial design effectiveness on corporate financial performance. Journal of Product Innovation Management, 22(1), 3–21.

Hutchins, E. (1995). Cognition in the Wild. Cambridge, MA: MIT Press.

Johansson-Sköldberg, U., Woodilla, J., & Çetinkaya, M. (2013). Design thinking: Past, present and possible futures. Creativity and Innovation Management, 22(2), 121–146.

Kapferer, J. N., & Bastien, V. (2012). The Luxury Strategy (2nd ed.). London: Kogan Page.

Kaplan, R. S., & Norton, D. P. (1996). The Balanced Scorecard: Translating Strategy into Action. Boston: Harvard Business School Press.

Karjalainen, T. M. (2007). It looks like a Toyota: Educational approaches to designing for visual brand recognition. International Journal of Design, 1(1), 67–81.

Keller, K. L. (1993). Conceptualizing, measuring, and managing customer-based brand equity. Journal of Marketing, 57(1), 1–22.

Khurana, A., & Rosenthal, S. R. (1998). Towards holistic "front ends" in new product development. Journal of Product Innovation Management, 15(1), 57–74.

Kimbell, L. (2011). Rethinking design thinking: Part I. Design and Culture, 3(3), 285–306.

Liedtka, J. (2015). Perspective: Linking design thinking with innovation outcomes through cognitive bias reduction. Journal of Product Innovation Management, 32(6), 925–938.

March, J. G. (1991). Exploration and exploitation in organizational learning. Organization Science, 2(1), 71–87.

Martin, R. L. (2009). The Design of Business: Why Design Thinking is the Next Competitive Advantage. Boston: Harvard Business Press.

Micheli, P., Wilner, S. J. S., Bhatti, S. H., Mura, M., & Beverland, M. B. (2019). Doing design thinking: Conceptual review, synthesis, and research agenda. Journal of Product Innovation Management, 36(2), 124–148.

Nakata, C., & Im, S. (2010). Spurring cross-functional integration for higher new product performance: A group effectiveness perspective. Journal of Product Innovation Management, 27(4), 554–571.

Nobelius, D., & Trygg, L. (2002). Stop chasing the front end process — management of the early phases in product development projects. International Journal of Project Management, 20(5), 331–340.

Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. Organization Science, 5(1), 14–37.

Okonkwo, U. (2007). Luxury Fashion Branding: Trends, Tactics, Techniques. Basingstoke: Palgrave Macmillan.

Page, M. J., McKenzie, J. E., Bossuyt, P. M., et al. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. BMJ, 372, n71.

Perks, H., Cooper, R., & Jones, C. (2005). Characterizing the role of design in new product development: An empirically derived taxonomy. Journal of Product Innovation Management, 22(2), 111–127.

Perttula, M., & Sipilä, P. (2007). The idea exposure paradigm in design idea generation. Journal of Engineering Design, 18(1), 93–102.

Ranscombe, C., Hicks, B., Mullineux, G., & Singh, B. (2012). Visually decomposing vehicle images: Exploring the influence of different aesthetic features on consumer perception of brand. Design Studies, 33(4), 319–341.

Ravasi, D., & Lojacono, G. (2005). Managing design and designers for strategic renewal. Long Range Planning, 38(1), 51–77.

Sethi, R., & Iqbal, Z. (2008). Stage-gate controls, learning failure, and adverse effect on novel new products. Journal of Marketing, 72(1), 118–134.

Sheremata, W. A. (2000). Centrifugal and centripetal forces in radical new product development under time pressure. Academy of Management Review, 25(2), 389–408.

Sio, U. N., Kotovsky, K., & Cagan, J. (2015). Fixation or inspiration? A meta-analytic review of the role of examples on design processes. Design Studies, 39, 70–99.

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. Journal of Business Research, 104, 333–339.

Star, S. L., & Griesemer, J. R. (1989). Institutional ecology, ‘translations’ and boundary objects. Social Studies of Science, 19(3), 387–420.

Taggar, S. (2002). Individual creativity and group ability to utilize individual creative resources: A multilevel model. Academy of Management Journal, 45(2), 315–330.

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. Strategic Management Journal, 18(7), 509–533.

Torraco, R. J. (2005). Writing integrative literature reviews: Guidelines and examples. Human Resource Development Review, 4(3), 356–367.

Tovey, M. (2016). Design for Transport: A User-Centred Approach to Vehicle Design and Travel. London: Routledge.

Tovey, M., Porter, S., & Newman, R. (2003). Sketching, concept development and automotive design. Design Studies, 24(2), 135–153.

Ulrich, K. T., & Eppinger, S. D. (2015). Product Design and Development (6th ed.). New York: McGraw-Hill Education.

Urde, M., Greyser, S. A., & Balmer, J. M. T. (2007). Corporate brands with a heritage. Journal of Brand Management, 15(1), 4–19.

Utterback, J., Vedin, B.-A., Alvarez, E., Ekman, S., Sanderson, S. W., Tether, B., & Verganti, R. (2006). Design-Inspired Innovation. Singapore: World Scientific.

Verganti, R. (2009). Design-Driven Innovation. Boston: Harvard Business Press.

Verganti, R. (2011). Radical design and technology epiphanies: A new focus for research on design management. Journal of Product Innovation Management, 28(3), 384–388.

Verganti, R., & Öberg, Å. (2013). Interpreting and envisioning: A hermeneutic framework for the radical innovation of meanings. Industrial Marketing Management, 42(1), 86–95.

Vigneron, F., & Johnson, L. W. (2004). Measuring perceptions of brand luxury. Journal of Brand Management, 11(6), 484–506.

Walsh, V., Roy, R., Bruce, M., & Potter, S. (1992). Winning by Design: Technology, Product Design and International Competitiveness. Oxford: Blackwell.

Wheelwright, S. C., & Clark, K. B. (1992). Revolutionizing Product Development. New York: Free Press.

Wiedmann, K.-P., Hennigs, N., & Siebels, A. (2009). Value-based segmentation of luxury consumption behaviour. Psychology & Marketing, 26(7), 625–651.