

Circular Interior Principles in the Balinese Vernacular Tradition: Insights from *Lontar Kaputusan Sang Anala*

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Abstract

This study interprets the *Lontar Kaputusan Sang Anala* as a textual foundation for understanding circular interiority in Balinese vernacular architecture. Through directed content analysis and interpretive reading, six micro-cycles were identified—systemic integrity, regenerative threshold, controlled reversibility, ritualized maintenance, adaptive repositioning, and ritualized reset—forming what is proposed as the Balinese Vernacular Interior Cycle Concept. The findings reveal that Balinese architecture sustains spatial continuity through cyclical regeneration of structure, ritual, and meaning, long before modern circular design theories emerged. Beyond conceptual insight, this study outlines practical strategies for contemporary interior design, including ritualized maintenance scheduling, modular planning, culturally grounded sustainability indicators, and participatory collaboration with *undagi* (master builders). The research contributes to expanding global circular design theory by integrating cosmological and ethical dimensions of spatial regeneration, demonstrating that non-Western epistemologies provide parallel, living models of circularity. Ultimately, it reframes the interior as a regenerative organism where balance is preserved through continuous acts of renewal rather than linear consumption.

Keywords: Balinese vernacular interior, circular interior design, *Kaputusan Sang Anala*, architectural manuscript, regenerative design.

Abstrak

Penelitian ini menafsirkan *Lontar Kaputusan Sang Anala* sebagai landasan tekstual untuk memahami konsep sirkularitas interior dalam arsitektur vernakular Bali. Melalui analisis konten terarah dan pembacaan interpretatif, penelitian ini mengidentifikasi enam mikro-siklus—integritas sistemik, ambang regeneratif, reversibilitas terkontrol, perawatan ritus, reposisi adaptif, dan siklus pencucian ulang—yang kemudian diformulasikan sebagai Konsep Siklus Interior Vernakular Bali. Hasil kajian menunjukkan bahwa arsitektur Bali telah mengandung prinsip regenerasi ruang dan material jauh sebelum teori desain sirkular modern muncul. Penelitian ini menawarkan penerapan praktis bagi desainer interior, antara lain melalui perencanaan pemeliharaan ritual, perancangan modular, indikator keberlanjutan berbasis budaya, serta kolaborasi partisipatif dengan *undagi* (ahli bangunan tradisional). Kajian ini memperluas wacana desain interior sirkular dengan menambahkan dimensi kosmologis dan etis terhadap proses regeneratif ruang, serta menegaskan bahwa epistemologi non-Barat telah lama menerapkan prinsip sirkularitas melalui bahasa ritual dan moral. Akhirnya, penelitian ini menempatkan interior sebagai organisme regeneratif yang mempertahankan keseimbangan melalui tindakan pembaruan berulang, bukan konsumsi linear.

Kata kunci: interior vernakular Bali; circular interior; *Kaputusan Sang Anala*; manuskrip arsitektur; desain regeneratif.

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Introduction

In recent years, the notion of *circular interior design* has begun to emerge from the broader framework of the circular economy, which promotes regenerative systems where materials and components remain in continuous use through

processes of reuse, repair, remanufacture, and recycling (Bocken *et al.*, 2016; Ghisellini *et al.*, 2016). Within the built environment, this philosophy has evolved into circular construction and buildings-as-material-banks, seeking to minimize demolition waste and extend the service life of components (Oliveira *et al.*, 2024). The recent *XFrame Circular Interior Design Guide for Architects* (2023) articulates how circularity can be embedded at the interior scale—through material selection, modular geometry, reversible fixings, and detailed documentation—arguing that interiors, as the most frequently replaced building layer, are critical leverage points for implementing the circular economy (Finch *et al.*, 2023).

Parallel to these technical frameworks, new scholarship links material recovery with digital manufacturing. Malé-Aleman et al. describe *circular wood ecosystems* that repurpose residual timber for interior use through Industry 4.0 technologies such as parametric modelling, robotic fabrication, and digital-twin monitoring (Malé-Aleman et al., 2025). These approaches envision the interior as a data-driven metabolic system, where each element possesses a digital identity enabling future reuse. While such developments demonstrate an impressive capacity for optimization, they also expose a limitation of current discourse: circular interior design has been largely defined through technological and material efficiency, with limited consideration of cultural, ethical, and ritual dimensions that have long structured spatial continuity in non-Western contexts (Rashdan & Ashour, 2024; Xu *et al.*, 2025).

Indonesia provides fertile ground for reinterpreting circular interiority beyond technocentric frameworks. Across the archipelago, vernacular spatial systems evolved not from industrial efficiency but from ritual ecology—integrating human, environmental, and spiritual relations within cyclical patterns of maintenance and renewal (Schefold *et al.*, 2004). In Bali, for instance, the *Undagi* (traditional master builder) sustains architectural balance through acts of ritualized repair (*prascita*), proportional alignment (*bah bangun*) and ecological reciprocity (*Tri Hita Karana*) (Alit, 2003; Dwi Noorwatha *et al.*, 2024; Dwijendra & Adhika, 2022; Gunawan, 2012). These practices embody a living form of circularity, where space regenerates meaning and energy rather than merely material performance. Yet, academic recognition of such systems within interior design research remains scarce. Most Indonesian studies address sustainability at the architectural scale—covering material choice, energy efficiency, or symbolic aesthetics—while the interior scale of cyclical practice, involving maintenance, spatial adaptation, and ritual renewal, has received little theoretical attention.

This conceptual gap becomes pronounced in the context of modern Balinese interiors, which often appropriate the aesthetics of *Architecture Traditional Bali*—timber columns, thatched ceilings, and ornamented beams (Covarrubias, 2018; Davison, 2014; Gelebet, 1986; Wijaya, 2016)—without preserving the epistemic logic underlying them. Contemporary villas and hospitality projects reproduce form but omit the cyclical ethics that once governed how interiors aged, transformed, and were ritually maintained. Bridging this gap demands more than material substitution; it requires a textual and philosophical excavation of the vernacular manuscripts that encode cyclical design intelligence. Among these manuscripts, the *Lontar Kaputusan Sang Anala* offers a unique textual foundation (Suandra, 1991). Unlike prescriptive manuals such as *Aṣṭa Kosala Kosali* or *Aṣṭa Bhumi* (Nikanaya *et al.*, 2007), *Kaputusan Sang Anala* addresses the ethics of construction, repair, and renewal—detailing the taboos and permissions associated with replacing structural elements, purifying completed buildings, and preserving spatial sanctity (Suandra, 1991). Read through a design-theoretical lens, the manuscript reveals an implicit logic of interior circularity: spatial integrity is maintained through recurrent cycles of ritualized regeneration rather than linear decay and replacement. Its key notions—*guna* (balance of function), *lebur brata* (ethical threshold), and *prascita* (ritual renewal)—encode an indigenous circular system where structure, space, and spirit coexist in regenerative harmony.

This study positions the *Lontar Kaputusan Sang Anala* as a critical source for conceptualizing what is here termed the Balinese Vernacular Interior Cycle Concept. By decoding the text's prescriptions into design-relevant categories—systemic integrity, regenerative thresholds, controlled reversibility, ritualized maintenance, adaptive repositioning, and ritualized reset—the paper articulates how interior environments were historically sustained and sacralised within Balinese epistemology. Rather than suggesting that the manuscript anticipates modern sustainability standards, the argument highlights a parallel form of cyclical reasoning grounded in cosmology and moral ecology. Consequently, this research addresses two intertwined gaps: (1) the disciplinary gap—the absence of interior-scale studies in Indonesian vernacular research; and (2) the epistemological gap—the neglect of non-Western, ritual-based models within global circular design theory. The novelty lies in re-reading a classical manuscript not as cultural heritage but as a design epistemic artifact that expands the vocabulary of circular interior design beyond its industrial origins. By engaging with *Kaputusan Sang Anala*, the study reframes circularity as a living process of regeneration—where spatial sustainability emerges through continuous acts of renewal that intertwine ritual, ethics, and material care.

Literature Review

Mainstream work on circularity frames design as the upstream driver that slows, narrows, and closes resource loops through choices that enable durability, repair, reuse, and disassembly (e.g., Bocken's strategy set; Stahel's service-life thinking) (Bocken *et al.*, 2016; Stahel, 2019). In interiors, this translates into longer component lifetimes, reversible assemblies, and adaptable layouts rather than linear fit-out cycles. Recent overviews reiterate that circularity is a systems approach—not only material substitution—requiring designers to anticipate future transformations and value retention

across use phases (Ellen Macarthur Foundation, 2021; Ergo Office Plus, 2025; Gravagnuolo *et al.*, 2019). Although a dedicated “circular interior” canon is still emergent, sectoral work (education, retail, offices) shows concrete methods and metrics: interior studios prototyping reuse-first fit-outs, teaching modules that couple circular principles with bill-of-materials auditing, and practitioner studies that document how designers actually operationalize CE in day-to-day projects (Malé-Alemayn *et al.*, 2025; Savitri & Amalia, 2025). Public-facing playbooks (e.g., EMF’s Circular Design Guide) have helped normalize design rituals such as mapping flows, setting reuse targets, and planning for next-use at concept stage.

Two streams are especially influential for interiors: DfD and buildings as material banks (BAMB). DfD literature advocates standard grids, dry connections/mechanical fasteners, and parallel disassembly paths—techniques that make replacement and reuse feasible at the end of each occupancy cycle (Cappelli *et al.*, 2007; Ostapska *et al.*, 2024). BAMB extends this logic with material passports to preserve component identity and value across fit-out generations. These tools have begun to enter practice: recent office projects report >90% reuse rates and large embodied-carbon savings, signaling that circular interiors are technically and economically viable (Copeland & Bilec, 2020; Oliveira *et al.*, 2024). Despite methodological progress, the circular-interior discourse remains technocentric and Western-leaning. Reviews emphasize economic–environmental performance, while cultural–ritual dimensions of interior continuity are under-theorized (Oliver, 1997; Rapoport, 1969; Wu *et al.*, 2022). Toolkits largely assume industrial supply chains (passports, logistics, fastener specs) rather than vernacular knowledge systems where cycles are sustained through ritual calendars, spatial ethics, and communal maintenance. This gap is visible in practitioner studies that document implementation barriers but seldom discuss non-Western epistemologies as sources of circular logics.

Indonesia hosts diverse manuscript- and craft-based design traditions whose cyclical practices (maintenance rites, adaptive family layouts, repair taboos/permissions) predate industrial sustainability narratives (Adiyanto, 2020; Bloembergen & Eickhoff, 2020; Schefold *et al.*, 2004). Yet, the interior scale of these cycles—how components are ritually renewed, when partial replacement is legitimate, how foundations and pillars govern room transformation—remains marginal in circular-design literature. Integrating such sources would broaden circularity from resource management to spatial–ritual continuity. Within this context, Balinese practice is salient. Contemporary Balinese interiors—hotels, villas, urban homes—derive form languages from *Arsitektur Tradisional Bali*, but their epistemic underpinnings (cosmology, calendrics, ritualized maintenance) are rarely articulated in design guides (Achmadi, 2016; Francione, 2012b; Wijaya, 2016). A literature bridge is therefore needed: one that reads vernacular texts not merely as aesthetics or symbolism but as interior-scale cycle instructions—a perspective missing in global circular references and sectoral case studies cited above.

Building on circular-economy strategy frameworks (slowing/narrowing/closing), and on DfD/BAMB toolsets for reversible assemblies and value retention, this article proposes a complementary lens: reading the *Lontar Kaputusan Sang Anala* as a Balinese Vernacular Interior Cycle Concept. The novelty is twofold:

1. Epistemic expansion — repositioning circular interior not only as a technical program (fasteners, passports) but as a cosmological program in which ritualized thresholds, integrity rules, and renewal rites regulate when/how interior elements are replaced, re-sacralised, or fully reset. This addresses the culture-blind spot identified in CE reviews.
2. Scale correction — extracting micro-cycles at the interior level (pillars, joints, foundations, room functions) rather than building-scale generalities, bridging the gap between CE strategies and lived interior practice documented by emerging education/practice studies.

By situating the Balinese manuscript within—and against—the dominant CE/design sources (EMF guides; Bocken’s strategies; Stahel’s longevity paradigm; DfD/BAMB protocols), the review establishes the conceptual scaffolding for our analysis: modern circularity offers robust how-to mechanisms; vernacular texts supply why/when logics that bind material, spatial, and spiritual continuity. Together, they enable a culturally grounded model of circular interior that is technically actionable and epistemologically faithful

Methods

1. Research Design

This study adopts a qualitative, interpretive design that combines textual analysis, directed content analysis, and hermeneutic interpretation (Crist & Tanner, 2003). The objective is to extract and conceptualize the implicit principles of *circular interiority* within the *Lontar Kaputusan Sang Anala*—a Balinese architectural manuscript that prescribes ethical and procedural norms for construction, maintenance, and spatial renewal. Rather than treating the manuscript as a historical artifact, it is approached as an epistemic text containing design-relevant logic that can inform contemporary interior theory. The research design thus integrates philological accuracy with design interpretation, bridging the humanities and design studies.

2. Corpus and Data Source

The primary data source is the *Lontar Kaputusan Sang Anala*, transcribed and transliterated from Old Balinese script into Latin characters. The manuscript was selected because it uniquely addresses post-construction practices—replacement,

repair, and ritual cycles—which are seldom discussed in other Balinese architectural texts such as *Aṣṭa Kosala Kosali* or *Aṣṭa Bhumi* (Suandra, 1991). Structurally, the text unfolds across seven thematic clusters that mirror a complete design–life cycle (Table 1):

Table 1. General Overview of *Lontar Kaputusan Sang Anala* Content

Thematic Cluster	Representative Clauses	Core Meaning
Cosmic and Moral Foundation	Pasal 1–14 (<i>Paguman Sanghyang Anala Ring Para Sisya, Ling Nira Sanghyang Anala, Telu Mala, Sangkang Lumakwan</i>)	Instructional preamble where <i>Sanghyang Anala</i> explains the divine origin of fire, moral impurities (<i>mala</i>), and the metaphysical foundation of craftsmanship.
Ethical Discipline and Inner Purification	Pasal 15–26 (<i>Sasana, Sadhana Tarpana, Padut Sanghyang Guru, Wenang Palakwan</i>)	Codifies self-discipline and ritual purity—preconditions for an <i>Undagi</i> before engaging with material work.
Design and Measurement Protocols	Pasal 27–39 (<i>Ngawe Sukat Wawangunan, Pawah Wangunia, Panyucyan Sukat, Wenang Pamralinan</i>)	Describes the sequential design process: measuring, testing, correcting, purifying—establishing the conditional logic <i>yan... wenang... tan wenang... ila-ila</i> that regulates decisions.
Correction and Reconstruction	Pasal 54–59 (<i>Wenang Ngasari, Pangrereg Sira, Angugul, Paniksa Ning Pangrereg</i>)	Outlines ritualized repair and substitution procedures, emphasizing <i>pamralinan</i> (ethical correction).
Authorization and Mastery	Pasal 69–77 (<i>Wenang Sang Undaya, Sanghyang Wiswakarma, Wenang Pangwangun</i>)	Reaffirms divine authorization and links craftsmanship to <i>Wiswakarma</i> , situating the <i>Undagi</i> ’s authority within cosmic legitimacy.
Teacher–Disciple Transmission	Pasal 84–90 (<i>Wimawang Hyang Guru, Sanghyang Guru, Dharma Tanpa Sila</i>)	Discusses sacred transmission of knowledge, the ethics of teaching, and moral consequences of negligence.
Consecration and Closure	Pasal 105–113 (<i>Makire Angwangun, Sang Undagi, Dharmaning Undagi</i>)	Concludes with affirmation of the <i>Undagi</i> ’s <i>dharma</i> —the moral code uniting design, ritual, and social responsibility.

Together these clusters portray *Kaputusan Sang Anala* not merely as a manual of construction but as a cyclical doctrine of moral, spatial, and material regeneration—a system where every design act is situated within cosmological accountability. Passages 90–111 were identified as the analytical corpus, as they contain prescriptive clauses regulating the replacement of pillars, structural regeneration, purification (*prascita*), and ritualized maintenance. Secondary data consist of supporting scholarly works on Balinese architecture (Dwijendra, 2010; Gelebet, 1986; Swastika, 2014), vernacular design epistemology (Noorwatha et al., 2024a; Noorwatha et al., 2025; Noorwatha et al., 2024b), and global circular interior theory (Bocken et al., 2016; Ellen Macarthur Foundation, 2021; Stahel, 2019). These sources provided theoretical grounding for comparative interpretation. This study positions the manuscript as a primary source for conceptualizing the Balinese Vernacular Interior Cycle Concept. By decoding its prescriptions into six design-relevant categories—systemic integrity, regenerative thresholds, controlled reversibility, ritualized maintenance, adaptive repositioning, and ritual reset—the paper articulates how interior environments were historically sustained and sacralised within Balinese epistemology. Rather than claiming that the text anticipates modern sustainability metrics, it demonstrates a parallel cosmological model of circularity that unites structure, space, and spirit in continuous renewal.

3. Analytical Framework

The analysis follows a directed content analysis approach (Hsieh & Shannon, 2005), where existing theoretical constructs from circular design are used as initial coding categories, while allowing emergent vernacular categories to surface inductively from the text. To maintain contextual fidelity, the analysis was complemented by a semiotic reading (Peircean triad of icon–index–symbol) to trace how material actions (e.g., replacing pillars, renewing foundations) signify broader cosmological meanings. An initial codebook was developed, aligning textual indicators from *Kaputusan Sang Anala* with six circular interior dimensions derived from global literature (Bocken et al., 2016; Durmišević, 2024; Ghisellini et al., 2016):

- Systemic Structural Integrity (R-INT) – maintaining wholeness by replacing components collectively, not individually.
- Regenerative Thresholds (R-THR) – defining permissible limits before total renewal.
- Controlled Reversibility (R-REV) – allowing change through ritual re-authorization.
- Ritualized Maintenance (R-MAINT) – continuous care through calendrical rites.
- Adaptive Repositioning (R-ADAPT) – spatial realignment in response to new functions or lineage shifts.
- Ritualized Reset Cycle (R-RESET) – purification and recommissioning of renewed elements.

4. Coding and Interpretation Procedure

Each relevant passage (sloka) from the manuscript was coded according to the six categories above. The analysis proceeded in three stages:

- Descriptive Coding – identification of structural or ritual acts (e.g., “replacing a pillar,” “performing *caru* purification”) as textual evidence.

- Interpretive Coding – extraction of implicit logic (e.g., structural integrity, sacred balance, or cyclical temporality) from each passage.
- Conceptual Mapping – synthesis of findings into a relational diagram outlining how each category interlocks to form the *Balinese Vernacular Interior Cycle Concept*.

Throughout this process, reflexive memos were maintained to track interpretive bias and ensure analytic transparency. Philological accuracy was preserved by referencing original Balinese terms and providing their conceptual equivalents rather than literal translations.

5. Validation and Ethical Considerations

To enhance validity, triangulation was performed through:

- Comparative cross-textual review with *Aṣṭa Kosala Kosali* and *Aṣṭa Bhumi* to confirm consistency of ritual-structural principles;
- Expert consultation with Balinese *undagi* practitioners and manuscript scholars to verify contextual meanings; and
- Theoretical alignment with circular interior and regenerative design frameworks to ensure conceptual relevance.

As the study involved no human participants, ethical approval was not required. Nevertheless, interpretive procedures adhered to the principles of the Declaration of Helsinki (2013) regarding responsible research conduct, and cultural respect for sacred texts was maintained through proper citation and acknowledgment of Balinese knowledge custodians. The result of the methodological process is a conceptual synthesis rather than statistical measurement. The final analytical outcome articulates the *Balinese Vernacular Interior Cycle Concept*—a culturally grounded framework illustrating how interior continuity, material regeneration, and ritual cycles are intertwined in *Kaputusan Sang Anala*. This model is proposed as a preliminary foundation for future empirical validation through participatory studies with practicing *undagi* and interior designers.

Findings and Discussion

1. Lontar Kaputusan Sang Anala and the Balinese Vernacular Architectural Context

Lontar Kaputusan Sang Anala occupies a unique position among Balinese architectural manuscripts (*wiwakarmaatmaja tattwa*). While texts such as *Aṣṭa Kosala Kosali* and *Aṣṭa Bhumi* focus primarily on spatial organization, proportional systems, and land classification, *Kaputusan Sang Anala* deals with procedural ethics—the moral and ritual consequences of building, modifying, or renewing structures after they have been sanctified (*prayascita*). The manuscript, attributed to the wisdom of *Sang Anala* (the fire deity associated with transformation and purification), reveals a system of cosmological engineering where the physical act of construction is inseparable from the metaphysical act of maintaining harmony between *bhuana alit* (the microcosm of human space) and *bhuana agung* (the macrocosm of the universe). In Balinese vernacular architecture, the interior is not an autonomous domain but part of a continuum that integrates building form, ritual, and cosmology (Davison, 2014; Francione, 2012a). Each component—pillar (*sasaka*), beam, wall, or floor—embodies *prana* (vital energy) and participates in the cyclical process of creation, maintenance, and dissolution (*utpatti, sthiti, pralina*) (Aranha, 1991; Howe, 1983; Kagami, 1988). The *undagi* (master builder) acts as both a designer and priest, ensuring that every modification within the dwelling aligns with cosmic balance (Noorwatha & Santosa, 2023). This worldview inherently supports a circular interior logic, long before the emergence of sustainability discourse. Within this context, *Kaputusan Sang Anala* serves as a codified articulation of how interior elements are ethically renewed, replaced, or re-sacralized, establishing a vernacular form of circularity rooted in ritual temporality.

2. Identified Interior Micro-Cycles in Kaputusan Sang Anala

Through directed content analysis, six interrelated interior micro-cycles were extracted from passages 90–111 of the manuscript. These cycles reflect how the Balinese understanding of construction integrates material, spiritual, and social regeneration.

a. Systemic Structural Integrity: the Wholeness of the Interior Body

Sloka 90–91 emphasize that when a pillar (*sasaka*)—symbolically the body's bone—is damaged or replaced, partial substitution is forbidden: “*Tan yogya ngéntosin sanunggal ila-ila kojarannia*,” meaning it is not proper to replace only one part (Suandra, 1991). The text instructs that either all are replaced, or none, to prevent *ngutang guna* “losing the function.” This reveals an organic perception of architecture: the interior is a living body, not a collection of interchangeable parts. The principle resonates with modern “systemic circularity,” where interventions must consider the entire system to maintain performance and integrity (Stahel, 2019). In Balinese terms, this is both structural and spiritual: disturbing one element without rebalancing the others risks *baya* (misfortune). Thus, *Kaputusan Sang Anala* anticipates an integrative maintenance ethic—a design logic ensuring the continuity of the interior organism through collective regeneration.

b. Regenerative Thresholds: Defining the Limits of Renewal

The subsequent verses (91–92) introduce the concept of *lebur brata*—literally “breaking the vow”—to describe the danger of exceeding half the replacement of structural elements. Once more than half the system is renewed, the old sanctity

cannot be retained; a new ritual cycle must begin. This defines a regenerative threshold, where minor repairs belong to the domain of maintenance, but surpassing a certain limit requires total ritual renewal (*sari angumbang*) (Suandra, 1991). This nuanced distinction between repair and rebirth demonstrates the manuscript's temporal intelligence: regeneration is not continuous substitution but a managed cycle governed by ethical timing. In interior terms, it suggests that renewal must respect proportional continuity—mirroring the principle of *life-cycle extension* while acknowledging the sacred point of no return.

c. Controlled Reversibility: Ethical Constraints on Alteration

Verses 93–94 prohibit drilling holes or adding components (*mongpong sasaka, ngentosin twi ngawewehin*) after a structure has been ritually purified. The act, called *katwekan* or *nagasesa*, is said to “invite misfortune.” This establishes the idea of controlled reversibility—change is permissible only when it re-enters the ritual cycle of consecration. In modern terms, this parallels *design for disassembly* but governed by ritual authorization rather than mechanical feasibility (Suandra, 1991). Such a rule reflects a moral ecology of modification: the right to transform the interior exists, but only through ritual revalidation that rebalances its energetic order. The *undagi*'s role here parallels a sustainability consultant—mediating between physical necessity and metaphysical responsibility.

d. Ritualized Maintenance: Perpetuating Balance through Ceremony

In Sloka 99, the manuscript details the procedure for repairing cracked foundations: the act must be accompanied by offerings (*caru ayam samalulung selam*) and purification rituals. This prescribes ritualized maintenance, where physical repair is synchronized with spiritual cleansing. The ritual acts as both inspection and reset, reactivating the dwelling's *taksu* (divine charisma) (Suandra, 1991). From a design theory perspective, this practice aligns with the idea of preventive maintenance in circular design, yet it transcends mere technical upkeep. It affirms that maintenance is a performative act of continuity—a moment where the interior, the inhabitants, and the divine are reconnected. This spiritualized maintenance cycle represents a culturally grounded counterpart to Western circular protocols that rely on predictive data or material passports.

e. Adaptive Repositioning: Spatial Metabolism and Re-Alignment

Sloka 100 discusses the danger of constructing a new building (*yasa*) above or over an existing foundation (*babataran*). The manuscript warns against stacking or overlapping structural energies (*rancang bunga, yasa kakreb ing lemah*), instructing builders to relocate or reposition the plan before ritual consecration (Suandra, 1991). This embodies an early notion of spatial metabolism—the continuous re-alignment of interior configuration to prevent energetic stagnation. Such adaptive repositioning ensures that expansion or renovation is not merely additive but transformative, acknowledging the dwelling's previous cycles. It suggests a model of contextual adaptability where space evolves through displacement and renewal rather than accumulation—a subtle but profound form of circular adaptation embedded in Balinese practice.

f. Ritualized Reset Cycle: Re-Sanctification and the Return to Origin

Finally, Sloka 111 prescribes that any new pillar must undergo the full ritual of *prascita* before installation, followed by collective re-consecration of the entire structure (*waluya jati phalania*) (Suandra, 1991). This constitutes a ritualized reset cycle, restoring the interior's moral and spiritual wholeness. The act of replacing, purifying, and reinstalling transforms material substitution into cosmological renewal. In modern design language, this parallels *building recommissioning*—the act of recalibrating systems after modification—but within a sacred temporal logic. Here, circularity transcends material recovery; it becomes an ontological loop linking past sanctity with future inhabitation.

3. Synthesis: The Balinese Vernacular Interior Cycle Concept

The six cycles collectively form what this study terms the Balinese Vernacular Interior Cycle Concept—a culturally grounded model of interior circularity based on ritual temporality and systemic integrity. Unlike Western circular frameworks that focus on resource flow and technological control, *Kaputusan Sang Anala* conceptualizes circularity as cosmological recursion: the renewal of energy, form, meaning within the living architecture of the household (Table 2).

Table 2. Circularity as Cosmological Recursion

Cycle	Manuscript Source	Modern Analogue	Balinese Conceptual Value
Systemic Integrity	Sloka 90–91	Systemic circularity	Wholeness of spatial body (<i>sarira umah</i>)
Regenerative Thresholds	Sloka 91–92	Life-cycle management	Ethical boundary between repair and rebirth
Controlled Reversibility	Sloka 93–94	Design for disassembly	Authorization through ritual
Ritualized Maintenance	Sloka 99	Preventive maintenance	Rebalancing energy via offerings
Adaptive Repositioning	Sloka 100	Spatial adaptability	Realignment to maintain harmony
Ritualized Reset Cycle	Sloka 111	Recommissioning	Renewal of sanctity (<i>waluya jati</i>)

This synthesis reveals that Balinese interiority operates as a multi-layered circular system—where *matter, ritual, and social order* are inseparable. The manuscript demonstrates an advanced awareness of life-cycle processes: components decay, are ritually reborn, and reintegrated within the same spatial matrix. Rather than emphasizing efficiency, it

privileges continuity and equilibrium—values that resonate with emerging notions of *regenerative design* (Mang & Reed, 2012), yet rooted in a non-Western ontology. The Balinese and Western paradigms of circularity diverge fundamentally in their ontological orientation toward materiality and their understanding of what constitutes the *interior*.

In Western sustainable design, the interior is typically conceived as a functional subsystem of the building—an adaptable layer of components that can be optimized, disassembled, and reused. Materiality is treated as technical substance, valued for its durability, recyclability, or embedded energy. The designer's role, within frameworks such as *XFrame* or *Malé-Alemany et al.*, is to manage the material's life cycle through digital tools, modular coordination, and predictive modelling (Finch et al., 2023; Malé-Alemany et al., 2025). Here, circularity is technological and procedural: an exercise in system control aimed at minimizing entropy and maximizing efficiency.

In contrast, *Kaputusan Sang Anala* situates interiority within a sacred cosmology, where materials are not inert resources but living participants in an energetic continuum. Wood, stone, and earth possess *taksu*—a vital essence that must be ritually balanced (see the ontology of circularity in Figure 1).

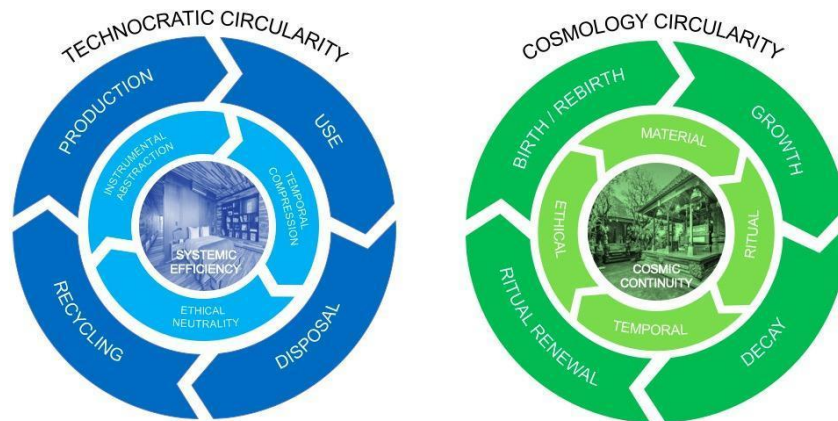


Figure 1. Ontology of Circularity

Circularity, in this view, is ethical and spiritual rather than purely material. Each act of construction, repair, or substitution is a negotiation between human intention (*manah*), natural agency (*prana*), and divine order (*dharma*). When a component is replaced, the process demands ritual acknowledgment; when a space is renewed, it undergoes spiritual recalibration. The interior, therefore, is not an enclosed environment but a porous cosmological organism where physical, moral, and metaphysical dimensions interact continuously. From a designer's standpoint, these differing ontologies yield distinct approaches to intervention.

- In the Western model, the designer is a system optimizer—tasked with controlling flows of material and energy within an industrially defined cycle. The occupant is often passive, a user who benefits from efficiency.
- In the Balinese model, the designer (*undagi*) is a ritual mediator, aligning spatial transformation with ethical timing and cosmological rhythm. The occupant becomes a co-participant, maintaining equilibrium through ritual acts, offerings, and daily care.

Thus, while Western circular interior design externalizes sustainability into measurable systems, the Balinese paradigm internalizes it as a way of living. Circularity is not a technological strategy but a moral rhythm that sustains the reciprocity between humans, materials, and the divine. The meaning of interiority, accordingly, transcends spatial enclosure—it signifies dwelling within a cycle of balance, where renewal is both a physical and spiritual act.

4. Interior as a Cosmic Entity: Balinese Cosmo Technical of Circularity

In Balinese epistemology, the interior is not a compartment within a building but an organism of the cosmos—a living body born through ritual and sustained through cyclical acts of care. The process of construction itself is described as *manik ring cacupu*, literally “a pearl within the womb,” meaning that a building is born, not made (Aranha, 1991; Gelebet, 1986; Wiryomartono, 2014). Each structure possesses a *sarira* (body), a *jiwa* (soul), and a *taksu* (spiritual charisma) that bind its physical form to the moral and cosmic order. Hence, the interior represents the “inner world” (*bhuwana alit*) where divine, natural, and human forces converge.

In this Cosmo technical worldview, circularity is ontological: every spatial transformation must acknowledge the cycle of birth, life, decay, and rebirth. The replacement of materials or structural components is not merely an act of maintenance—it is a ritual of reincarnation. *Kaputusan Sang Anala* permits the reuse of old materials or replacement of damaged structures, yet only within ethical and ritual boundaries (*yan... wenang... tan wenang... ila-ila*). The text insists

that such acts require purification (*prascita*), for an unritualized substitution would sever the building's cosmic balance. Thus, reuse is acceptable not as a sustainable choice but as a spiritual responsibility, ensuring continuity of essence between old and new elements.

This contrasts sharply with the Western technocentric paradigm, in which the interior is conceived as a functional environment—a mutable envelope optimized for performance and user comfort. Material reuse in this context follows economic and ecological rationales: minimizing waste, maximizing value, and ensuring resource efficiency. The cycle is quantitative, measured in energy, cost, or carbon. Conversely, the Balinese cycle is qualitative and symbolic, concerned with maintaining relational harmony (*nyom nyem*) between materials, humans, and the divine order. From the designer's perspective, these worldviews engender distinct modes of authorship.

- The Western designer operates as a *technologist of form*: responsible for managing material flows, adaptability, and longevity through knowledge of systems and technologies.
- The Balinese *undagi*, by contrast, acts as a *cosmic midwife*: guiding the birth, maintenance, and rebirth of the architectural body in alignment with ritual time and cosmic law.

Occupancy, too, carries different meanings. In modern Western interiors, the occupant is primarily a user who experiences comfort, productivity, and aesthetics. In the Balinese tradition, the occupant becomes a custodian of balance, engaging daily in offerings (*banten*), rituals of care (*mebanten merajan*), and mindful maintenance that sustain the dwelling's life force. The *interior* is therefore a field of ongoing reciprocity, not a static enclosure—its circularity enacted through continual acts of devotion and repair. In summary, *Kaputusan Sang Anala* demonstrates that circular interiority in Bali transcends material recovery or technical optimization. It is a cosmological ethic of dwelling, where design, construction, and habitation form an unbroken cycle of regeneration. Every repair is a rebirth; every reuse, a renewal of the sacred bond between form and meaning. Such a worldview challenges contemporary sustainability discourses to reimagine circularity not only as a *system of resources*, but as a *practice of reverence*.

The synthesis of textual interpretation and comparative literature highlights that circularity manifests through two contrasting epistemologies. Table 3 outlines these as *technocentric circularity*—which perceives the interior as a controllable system of material flow—and *cosmological circularity*, which understands the interior as a living organism bound to cosmic cycles. The former relies on technological precision and measurable efficiency; the latter sustains renewal through moral balance, ritual timing, and the metaphysical life of materials. Within this distinction, the Balinese interior emerges not as a functional enclosure but as a cosmic entity—a body that is born (*manik ring cacupu*) and continually reborn through ethical and ritual renewal. This Cosmo technical understanding provides the foundation for the following section, which explores the *Interior as a Cosmic Entity* and the Balinese ethics of circularity articulated in *Kaputusan Sang Anala*.

Table 3. Dual Paradigms of Circularity: Technocentric vs. Cosmological

Dimension	Technocentric Circularity (Western)	Cosmological Circularity (Balinese Vernacular)
Ontological Basis	Material system as industrial metabolism; circularity measured by resource efficiency, recyclability, and lifecycle optimization.	Cosmic organism (<i>sarira umah</i>)—the building as a living body born through <i>manik ring cacupu</i> (Aranha, 1991); circularity as moral and spiritual continuity.
Materiality	Inert matter to be managed, disassembled, and reconfigured through design technology.	Animate substance (<i>prana, taksu</i>) possessing energy and ethical significance; materials must be purified and ritually reactivated.
Temporality	Linear time segmented into product life cycles; renewal through technological intervention.	Cyclical time synchronized with ritual calendars (<i>wariga, dewasa ayu</i>); renewal through ceremonial rebirth (<i>prascita, caru</i>).
Design Agency	Designer as technologist and optimizer; focuses on material flow, performance metrics, and system integration.	<i>Undagi</i> as ritual mediator; guides construction and repair in harmony with cosmic law (<i>dharma</i>) and ancestral wisdom.
Occupant Role	User or consumer of interior functions; passive beneficiary of sustainable design.	Custodian of balance; active participant in maintaining <i>taksu</i> through offerings, care, and ritual maintenance.
Circular Logic	Closed-loop system of production–consumption–recycling; goal is material efficiency and waste elimination.	Recursion of life–death–rebirth within the spatial body; goal is the renewal of sanctity (<i>waluya jati</i>) and equilibrium (<i>nyom nyem</i>).
Meaning of Interior	Functional enclosure mediating human comfort and productivity.	Microcosm of the universe (<i>bhuwana alit</i>), where human, natural, and divine realms intersect in continuous regeneration.

This conceptual distinction reveals that the Balinese vernacular interior redefines circularity as cosmic continuity rather than material optimization. The *Undagi's* approach integrates ontological, ethical, and ritual cycles that govern how space lives, decays, and is reborn. By contrast, technocentric models externalize circularity into quantifiable systems. Bridging these paradigms invites a plural ontology of design—one that recognizes sustainability not as universal technology but as culturally situated Cosmo technics.

5. Implications for Contemporary Interior Design

Reinterpreting *Kaputusan Sang Anala* through the framework of circular interior design offers not only philosophical depth but also practical design strategies for contemporary practice in Bali and Indonesia. The manuscript's six cyclical principles—systemic integrity, regenerative threshold, controlled reversibility, ritualized maintenance, adaptive repositioning, and ritualized reset—can be translated into design actions that guide how interiors are conceived, maintained, and renewed within modern contexts.

a. From Vernacular Aesthetics to Vernacular Ethics

Many contemporary “Balinese interiors” reproduce the visual language of tradition—ornamental carvings, exposed timber, thatched ceilings—but often lose the ethical and temporal logic underlying their forms. The *Kaputusan Sang Anala* reminds designers that *form follows ritual* as much as function. To operationalize this insight:

- Design Principle: integrate *ritual time* as part of the design timeline. For instance, scheduling *ritual maintenance* (e.g., annual space purification, repainting, or wood oiling aligned with Balinese calendar days) as part of the post-occupancy phase.
- Application Example: A boutique hotel or public interior can embed *Tri Kahyangan* ceremonies into its maintenance plan, renewing not just finishes but also its *taksu* (spiritual energy).
- Design Ethic: The interior designer becomes a *mediator of continuity*, not merely a stylist. Authenticity, therefore, lies in maintaining cyclical care, not merely visual resemblance.

b. Redefining Sustainability through Indigenous Metrics

Modern sustainability frameworks (e.g., LEED, WELL, or CE metrics) often quantify performance by energy, waste, or carbon. *Kaputusan Sang Anala* suggests an alternative set of cultural performance indicators, shifting the conversation from extraction to regeneration (Table 3):

Table 3. KSA as Vernacular Counterpart for Global Metric

Global Metric	Vernacular Counterpart (from KSA)	Practical Interior Interpretation
Material lifespan	<i>Waluya jati phalania</i> (renewed purity of components)	Assess interior materials not just by durability, but by their potential for ritual or symbolic renewal (e.g., re-oiling, re-staining, re-sanctification)
Maintenance frequency	<i>Caru</i> and <i>segehan</i> cycles	Develop maintenance calendars aligned with cultural festivals and natural cycles rather than arbitrary service intervals
Spatial adaptability	<i>Rancang bunga</i> repositioning	Encourage flexible partitions or modular furniture layouts that respect ancestral orientation and avoid “stacking” sacred zones
User well-being	<i>Taksu</i> renewal	Incorporate sensorial and symbolic features (light, scent, ritual artifacts) that refresh the spatial atmosphere cyclically

Through this lens, sustainability becomes culturally resonant rather than imported. Designers can embed these indicators into project briefs, transforming them into measurable yet meaningful tools of evaluation.

c. Ritualized Maintenance as Design Practice

One of the most actionable insights from *Kaputusan Sang Anala* lies in its emphasis on ritualized maintenance. Instead of treating maintenance as a post-occupancy burden, the manuscript frames it as a creative and ethical act of keeping the interior alive. Designers can implement this by:

- Material Strategy: Select natural materials that invite periodic re-engagement—wood that needs oiling, fabrics that need washing, stone that darkens with use—so that the act of care becomes an embodied cycle.
- Spatial Strategy: Design visible joints, reversible connections, and access panels to facilitate repair and ritual handling. This aligns with the *controlled reversibility* principle.
- Cultural Strategy: Collaborate with local artisans and *undagi* to identify appropriate *caru* or purification rituals corresponding to maintenance events (e.g., pre-renovation ceremonies).

By ritualizing care, interior design reclaims an ethos of emotional durability—spaces maintained not because of technical manuals but because of shared meaning and responsibility.

d. Adaptive Repositioning in Space Planning

The *rancang bunga* principle—prohibiting direct construction atop an existing foundation without realignment—offers a spatial strategy for contemporary interiors: design spaces that can evolve through repositioning rather than replacement. Practically, this can mean:

- Modular Planning: using movable or reconfigurable elements (screens, tatami-like panels, flexible seating) to allow for cyclic rearrangement while respecting orientation (*kaja*–*kelod* axis).
- Temporal Zoning: creating zones that can transform based on life-cycle events—birth, marriage, death—mirroring the Balinese domestic evolution where *bale dauh* (west pavilion) or *bale dangin* (east pavilion) shifts in meaning over generations.

- Circular Retrofit: when renovating heritage interiors, apply the *rancang bunga* ethic by first analysing existing “energetic layers” (orientation, prior use) before adding new spatial programs—effectively “realigning” rather than erasing memory.

e. Ritualized Reset: Interior Recommissioning

The concept of *prascita* renewal offers a model for interior recommissioning—a process rarely ritualized in modern practice. Designers can reintroduce this cycle as a symbolic and participatory event that strengthens user attachment to place.

- Implementation Example: At project handover, conduct a *ritual opening* where users, designers, and craftsmen collectively “sanctify” the space. This can replace or complement corporate commissioning procedures.
- Long-term Practice: Establish ceremonial “renewal milestones” (e.g., every five or ten years) that coincide with functional upgrades or maintenance cycles, allowing users to consciously “reset” their relationship with the interior.

Such practices transform design handover into an ongoing conversation between use, decay, and rebirth, aligning human activity with cyclical spatial ethics.

f. Integrating the *Undagi* Mindset into Contemporary Collaboration

The *undagi* in Balinese tradition is not simply a builder but a philosopher–craftsman who maintains balance between sacred law (*tattwa*) and material execution (*palatanda*) (Agastia, 1994; Noorwatha *et al.*, 2024; Rubinstein, 1996). For contemporary practice, this mindset can be integrated through co-design and participatory collaboration:

- Collaborative Mapping: Involve *undagi* or traditional craftsmen in early schematic phases to interpret orientation, symbolic hierarchy, and ritual schedule.
- Hybrid Documentation: Complement digital drawings with ritual calendars and descriptive diagrams mapping the “life cycle” of interior elements.
- Educational Practice: Design curricula for interior design programs that include modules on “Vernacular Circularity,” combining life cycle thinking with cultural-ritual understanding.

This approach situates circular design within ethical co-production, restoring continuity between craft wisdom and modern technique.

6. Toward a Contemporary Balinese Circular Interior Framework

Synthesizing these strategies suggests a preliminary framework for applying *Kaputusan Sang Anala (KSA)* to practice (Table 4):

Table 4. Synthesizing KSA to Practice Strategy

Design Phase	Vernacular Principle	Contemporary Translation	Expected Outcome
Conceptualization	<i>Ngutang guna</i> (systemic integrity)	Design with system wholeness—avoid partial, isolated interventions	Spatial coherence
Development	<i>Lebur brata</i> (regenerative threshold)	Identify thresholds where renovation requires total reset	Ethical renewal
Construction	<i>Katwekan</i> (controlled reversibility)	Use reversible joinery, modular detailing	Ease of ritual disassembly
Post-Occupancy	<i>Ngider caru</i> (ritualized maintenance)	Plan ritual or community-based upkeep events	Continuous engagement
Adaptation	<i>Rancang bunga</i> (adaptive repositioning)	Enable realignment instead of vertical replacement	Spatial resilience
Recommissioning	<i>Prascita anyar</i> (ritual reset)	Combine functional and spiritual reopening ceremonies	Sustained sanctity

Through this operational lens, designers can translate the textual ethics of *Kaputusan Sang Anala* into tangible workflow: planning for continuity, designing for renewal, and managing interiors as living systems rather than static artefacts.

7. Practical Adoption Pathways for Interior Design Practice

To facilitate adoption by interior design practitioners, the *Balinese Vernacular Interior Cycle Concept* can be applied as a life-cycle design logic rather than a ritual prescription. The six micro-cycles may be translated into operational checkpoints across an interior’s lifespan, from system integrity assessment and renewal thresholds to reversible detailing, scheduled maintenance, adaptive reconfiguration, and recommissioning. In practice, this encourages designers to anticipate future repair, reuse, and transformation as part of the initial design brief, instead of treating interiors as disposable fit-outs.

Key principles such as controlled reversibility and adaptive repositioning align directly with contemporary circular strategies, including modular planning, dry connections, and design for disassembly, while adding an ethical dimension

that regulates proportional and timely change. Ritualized maintenance can be operationalized as a structured culture of care through material choice, visible joints, and planned renewal cycles, enhancing long-term spatial value and emotional durability. Finally, the ritualized reset principle may be reinterpreted as symbolic or participatory recommissioning moments that strengthen user attachment and mark spatial transformation. Together, these strategies position the model as a transferable framework that enables designers to manage interiors as regenerative systems, integrating circularity, continuity, and responsibility over time without requiring literal ritual enactment.

8. Reframing Global Discourse from Practice

At the global scale, these practical translations position Indonesia—particularly Bali—as a laboratory of living circularity, where *ritual intelligence* complements technological sustainability. The *Balinese Vernacular Interior Cycle Concept* thus offers an alternative to industrial circular design: one grounded in spatial empathy, cultural rhythm, and moral ecology. For contemporary interior designers, applying this approach means rethinking the professional act itself: from creating spaces that consume resources to curating spaces that regenerate meaning. The designer's task is not only to optimize efficiency but to choreograph continuity—ensuring that each phase of an interior's life participates in the cycle of renewal envisioned in *Kaputusan Sang Anala*.

Conclusion

This study examined *Lontar Kaputusan Sang Anala* as a textual foundation for developing a culturally grounded understanding of circular interiority within Balinese vernacular architecture. By focusing on the ethical and procedural prescriptions contained in the manuscript—particularly those governing repair, replacement, ritual renewal, and spatial transformation—the research revealed that Balinese interior logic operates through a sequence of cyclical relationships that sustain not only material durability but also spiritual balance and social continuity. The identified six interior micro-cycles—systemic integrity, regenerative threshold, controlled reversibility, ritualized maintenance, adaptive repositioning, and ritualized reset—constitute what has been formulated as the *Balinese Vernacular Interior Cycle Concept*.

The findings demonstrate that long before the emergence of industrial circular economy discourse, Balinese architectural thought had already articulated a holistic model of regeneration where matter, ritual, and meaning are interdependent. The *Kaputusan Sang Anala* emphasizes that interiors are living organisms whose components cannot be replaced arbitrarily; every act of modification must re-enter a cosmological cycle through ritual sanction. This worldview redefines circularity not as an environmental mechanism but as an ontological condition—a sacred rhythm of birth, maintenance, and rebirth embedded in the spatial fabric of daily life.

For contemporary design practice, this conceptual reframing offers a series of practical implications. It challenges designers to move beyond the superficial replication of Balinese aesthetics toward the integration of vernacular ethics: respecting temporal rhythms, ritual calendars, and the moral responsibility of maintenance. It provides a framework for developing indigenous sustainability indicators—such as *taksu renewal*, ritual maintenance frequency, and equilibrium preservation—that complement global environmental metrics with local cosmological relevance. Moreover, the study introduces actionable design strategies, from ritualized maintenance planning and adaptive repositioning of spatial layouts to participatory collaboration with *undagi* in co-design processes. These strategies translate the manuscript's principles into contemporary practice, illustrating how interiors can be designed as regenerative systems that renew both form and meaning across time.

The study's novelty lies in its methodological synthesis of philological reading and design interpretation, treating a sacred manuscript as an epistemic text that informs design theory rather than merely documenting cultural heritage. This approach positions vernacular knowledge as an equal contributor to global design discourse, restoring epistemic balance between traditional and contemporary design systems. The *Balinese Vernacular Interior Cycle Concept* thus extends the boundaries of circular design by adding a cosmological and ethical dimension—where the cycle of materials parallels the cycle of ritual and life itself.

Future research should expand this preliminary study through participatory and practice-based investigations. Collaborative workshops with *undagi*, interior designers, and local communities could translate these textual insights into prototypical interiors, testing how ritualized maintenance and modular planning can function in modern contexts. Further comparative studies with other Indonesian manuscripts may reveal cross-textual continuities in interior cycles across the archipelago. Such efforts will contribute to a more pluralistic and situated understanding of circularity, one that unites ecological awareness with cultural wisdom. Ultimately, *Kaputusan Sang Anala* teaches that the sustainability of interior space is not achieved through technological substitution alone, but through the continuous renewal of relationships—between human and material, sacred and mundane, past and future. In embracing this perspective, designers are invited to rediscover circularity as an art of maintaining balance through time, a living ethic that keeps both architecture and culture in motion.

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