Journal of Interdisciplinary Qur'anic Studies

Journal of Interdisciplinary Qur'anic Studies Vol.4, Issue 1, June 2025, Pages 151-173

A Taxonomy of Digital Business Models with a Focus on Qur'anic Promotion Entrepreneurship

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Article History: Received 11 March 2025; Accepted 2 May 2025

ABSTRACT: Original Paper

With the expansion of digital technologies and the increasing use of intelligent platforms and applications, a new space has emerged for promoting Qur'anic concepts. In this context, Qur'anic digital businesses can simultaneously pursue cultural, social, and economic objectives. The present study aims to develop a taxonomy of digital business models focusing on the promotion of the Qur'an with a global and intergenerational perspective. To this end, successful local examples such as *Habl al-Matin* and *Tanin Vahy*, as well as international applications available on Google Play and the App Store, including *Quran Companion, Muslim Pro, Ayat, and Learn Quran Tajwid*, were analyzed. This analysis was conducted based on business model dimensions, including value proposition, target customer, sales channel, and value capture. Subsequently, a conceptual framework comprising several main categories of these models is proposed. This taxonomy can serve as a foundation for the design, evaluation, and targeted support of Qur'anic digital businesses (QDB) with a social orientation, benefiting researchers, cultural policymakers, and religious entrepreneurs.

KEYWORDS: The Qur'an, Faith-Based Entrepreneurship, Qur'anic Content Promotion, Qur'anic Digital Businesses (QDB), Qur'anic Applications, Business Patterns, Intergenerational Digital Engagement.

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http://dx.doi.org/10.37264/JIQS.V4I1.9 https://iqs.sbu.ac.ir/article_106756.html

1. Introduction

Over the past two decades, digital transformation has profoundly reshaped numerous industries, including the domain of Qur'anic dissemination, education, and lifestyle. One of the most significant outcomes of this transformation has been the emergence of innovative Qur'anic digital business (QDB) applications, which, by leveraging advanced technologies such as artificial intelligence (AI), have fundamentally influenced the entire value chain of Qur'anic content creation, distribution, engagement, and lifecycle adoption (Arner et al. 2020). These applications, by offering innovative services in areas such as digital recitation platforms, intelligent Qur'an-learning systems, personalized interpretation tools, and AI-driven spiritual engagement, have challenged traditional modes of Qur'anic instruction and dissemination, thereby transforming the competitive and participatory structure of the broader Qur'anic digital ecosystem (Kao et al. 2020).

Among the enabling technologies, artificial intelligence (AI) remains a central fulcrum in the transformation of Qur'anic digital ecosystems. By integrating advanced capabilities such as big-data analytics, machine learning (ML), and natural language processing (NLP), AI enhances user-experience technologies, supports on-demand and inference-based service delivery, and drives responsive, context-aware Qur'anic applications. This technological convergence has redefined QDB service models, enabling personalized Qur'anic offerings, improving decision-making workflows, and elevating operational efficiency (Gabor & El-Said 2022).

Recent analyses of technological trends indicate several enabling technologies that are likely to shape the evolution of digital Qur'anic software ecosystems. Advances in AI-driven systems, including agent-based intelligence and edge computing, combined with low-code/no-code development platforms, hold significant potential to facilitate the creation of adaptive, accessible, and locally deployable Qur'anic applications—particularly in settings characterized by limited technical infrastructure or connectivity. Furthermore, emerging immersive interfaces (e.g., AR/XR), real-time data architectures, and privacy-enhancing technologies may enhance user engagement, enable personalized learning experiences, and support responsible data governance. Although these technologies are not yet uniformly implemented across the cases analyzed, they provide a critical contextual framework for anticipating future directions in the development of digital Qur'anic services, subject to empirical validation.

These combined trends illustrate how the evolving technology landscape extends far beyond traditional AI: from edge computing to immersive reality to privacy-first analytics. Within the domain of QDB, leveraging these technologies offers the potential to shift from static digital repositories toward intelligent, adaptive, immersive, and trustworthy platforms of engagement.

In addition to AI-driven analytics and immersive interfaces, recent advancements in interactive and social technologies are redefining the collective dynamics of Qur'anic engagement in the digital era. Conversational AI, voice recognition systems, augmented and mixed reality (AR/MR), gamified learning environments, and adaptive user interfaces have transformed Qur'anic interaction from a static, text-based practice into a participatory and emotionally resonant spiritual experience. Another particularly transformative dimension lies in the integration of social media ecosystems into QDBs. Mosques and Qur'anic centers increasingly maintain official social-media presences, functioning as virtual extensions of their physical communities. These pages not only facilitate Qur'anic education and event coordination but also host virtual Qur'anic circles where users across diverse regions can collectively recite, discuss, and reflect upon Qur'anic meanings.

Moreover, digital platforms now enable jurisprudential interaction by connecting believers with authoritative scholars. Through verified networks and AI-assisted knowledge-extraction tools, users can pose jurisprudential inquiries and receive guidance rooted both in the interpretive perspectives of scholars and in direct Qur'anic textual evidence. This integration promotes transparency, contextual alignment, and accessibility in religious guidance while preserving doctrinal authenticity. Another emerging trend is the incorporation of gamified community features—such as online recitation tournaments, memorization challenges, and interpretive competitions—which further enrich participation by blending spiritual devotion with social engagement. Collectively, these developments illustrate the emergence of an interactive, community-centered, and jurisprudentially integrated Qur'anic digital ecosystem, where spiritual learning, social interaction, and ethical guidance converge within the same digital environment.

Finally, Qur'anic-ecosystem stakeholders—developers, educators, and content creators—should consider not only "which features" but also "which ecosystem of technologies" will underpin next-generation growth. Agentic workflows, immersive experiences, federated learning for low-connectivity users, and ethical governance frameworks all become relevant considerations.

A review of the existing literature reveals that, despite growing scholarly attention to the transformative role of digitalization and new technological applications in QDBs, a comprehensive taxonomy of QDB business models has not yet been developed. In particular, within emerging digital religious economies, the absence of such a taxonomy has hindered the development of a nuanced understanding of how Qur'anic digital platforms can grow and adapt their business and engagement models to local socio-cultural and ethical contexts. Addressing this gap requires the formulation of an indigenous, context-sensitive classification that integrates technological innovation with religious authenticity, cultural appropriateness, and user trust within Qur'anic digital ecosystems.

2. Literature Review

The existing body of research on digital Qur'anic engagement demonstrates an evolving intersection between technology, pedagogy, and social innovation. Over the last decade, scholars have explored diverse approaches to integrating digital tools into Qur'anic education, ranging from mobile learning and gamification to artificial intelligence and mobile-based social media ecosystems. The common objective among these works is to enhance accessibility, interactivity, and the spiritual experience of Qur'anic learning in digital environments. Despite this growing interest, the literature reveals a lack of comprehensive taxonomies that classify these Qur'anic digital businesses within a systematic and comparative framework. The following review synthesizes previous studies according to four thematic clusters: digital Qur'anic learning and mobile applications; design, usability, and gamification; digital exegeses and online Qur'anic ecosystems; and AI-driven and socially oriented digital Qur'anic engagement.

The work of Ibrahim et al. (2013) surveyed the integration of the Qur'an and Arabic language learning into mobile applications for interactive and self-directed learning assistance, particularly within the Malaysian J-QAF education system. Their research found that mobile applications can serve as effective supplementary tools for classroom instruction. The study noted that interactive mobile systems enhance learners' motivation and engagement, especially among primary school students. Ibrahim et al. (2013) also pointed out the need for consistent content validation by qualified scholars to prevent misinterpretation or misuse of Qur'anic texts.

The paper by Adhoni et al. (2013a) presented an initiative to develop a comprehensive online portal and mobile-friendly Qur'an application integrating cloud technology. Their research outlined a system architecture that facilitates cross-platform accessibility and collaborative learning among

users. The study emphasized that cloud computing ensures real-time data synchronization and centralized storage of Qur'anic resources, which supports scalable deployment. In a related publication, Adhoni et al. (2013b) expanded this model into a cloud-based ecosystem for Qur'an dissemination and user engagement, demonstrating how distributed storage and remote access could enable global Qur'anic learning networks.

Elobaid et al. (2014) presented a detailed framework for designing and modeling Qur'an learning applications for Android devices. Their study adopted a user-centered design methodology and proposed specific guidelines for structuring Qur'anic educational content within digital interfaces. The paper emphasized that usability, navigation clarity, and multilingual support are critical factors in ensuring the successful adoption of Qur'anic learning applications.

Ishak et al. (2016) introduced MyQiraat, an interactive mobile application designed for learning and comparing Qur'anic *qirāʾāt* (recitation styles). Their study described the application's database structure, search capabilities, and audio features that allow users to listen to variant readings. The authors found that interactive applications can foster a deeper understanding of phonetic diversity within the Qur'an.

Senan et al. (2017) developed a Qur'an memorization mobile application specifically designed for children with autism, using the takrīr (repetition) technique. Their study combined educational psychology with assistive technology to create an inclusive learning environment. The results revealed that the integration of repetitive auditory stimuli with visual cues substantially improved memorization outcomes among children with special needs.

The study by AlMudara (2017) proposed a mobile application for Qur'an memorization that utilizes adaptive repetition techniques. The paper focused on improving learning outcomes among young users through continuous digital engagement. The research showed that the mobile format, when complemented with auditory and textual features, provides a flexible environment for repetitive recitation and self-evaluation.

The study by Ramli and Yusoff (2018) presented E-Iqraʾ, a mobile application for learning Qur'an recitation using voice-recognition technology. The system analyzed user pronunciation and provided instant corrective feedback. According to their findings, the integration of speech-recognition algorithms improved accuracy and user satisfaction compared with conventional learning methods. The authors concluded that AI-driven speech technology could revolutionize Qur'anic pedagogy by offering personalized, self-paced learning experiences.

A broader exploration of digital interpretation was undertaken by Pink (2019), who examined the transformation of Qur'anic hermeneutics in the age of new media. The author discussed how digital communication platforms reshape interpretive authority and access to knowledge. The paper argued that online environments democratize Qur'anic interpretation by enabling multiple voices and interpretive communities to emerge. However, Pink (2019) cautioned that the decentralization of authority also introduces risks of fragmentation and misinformation in digital religious discourse.

In another line of inquiry, Fanani et al. (2019) conducted a usability evaluation of a mobile-based application for learning Qur'anic writing through gamification. The paper applied heuristic evaluation and user-experience testing to measure learner engagement. According to the findings, gamified design elements, such as rewards, levels, and progress tracking, encouraged consistent participation and improved writing accuracy. Similarly, Bin Abdullah et al. (2019) reported that the TeBook mobile tool for Qur'an memorization was developed as an interactive platform that applies mobile computing to support systematic memorization. Their work described the technical architecture and user interface of TeBook, which provides verse-by-verse repetition, memorization tracking, and user feedback. The study demonstrated that the combination of mobile technologies and pedagogical techniques such as spaced repetition can increase memorization retention rates.

Finally, Buzdar and Farooq (2020) examined Qur'an memorization through mobile applications in the context of transformative marketing. Their research framed Qur'anic learning as a form of value co-creation between developers, educators, and users. The study highlighted how digital Qur'anic platforms can simultaneously pursue educational and social objectives, aligning with broader concepts of social entrepreneurship.

The contributions of Bunt (2021) offered an overview of how the Internet continues to influence Qur'anic scholarship and practice. His study traced the evolution of online Qur'anic engagement from early websites to mobile and social media platforms. Bunt (2021) emphasized that digital technologies not only increase accessibility but also redefine how religious authority and authenticity are negotiated. Similarly, Rippin (2013) discussed the implications and future possibilities of the Qur'an on the Internet, highlighting how digital tools expand interpretive possibilities and reshape pedagogical practices across Muslim communities worldwide.

The paper by Abdah (2024) presented a study on the utilization of mobile applications in supporting Qur'an and Hadith learning among Muslim learners. The author examined how mobile apps enhance accessibility and

self-directed learning, particularly in remote or under-resourced communities. Ali and Isnaini (2024) investigated the digitization of *Tafsir al-Mishbah* within the broader framework of the "living Qur'an." Their study explored how transferring traditional exegesis into digital platforms transforms interpretive engagement. The paper showed that digitization allows users to interact dynamically with exegetical texts through hyperlinks, thematic searches, and multimedia integration.

The work by Rasidin et al. (2025) analyzed Qur'anic interpretation on Instagram, focusing on how traditional methods of *tafsīr* evolve on visual social-media platforms. Their study used content analysis to examine posts, hashtags, and comment interactions that promote Qur'anic messages. The authors found that Instagram functions as a hybrid space where spiritual content, aesthetic expression, and community engagement coexist. According to Rasidin et al. (2025), this shift from textual to visual interpretation fosters a new kind of "*micro-tafsīr*" that appeals to younger audiences but requires mechanisms for theological verification.

Akem et al. (2025) addressed the opportunities and challenges of digital technology in Qur'anic learning, offering a comprehensive perspective on both pedagogical and infrastructural factors. The study discussed issues such as data privacy, technological literacy, and institutional readiness for adopting digital tools. According to Akem et al. (2025), the success of Qur'anic digitalization depends on aligning technological affordances with pedagogical frameworks rooted in Islamic values.

Collectively, these studies illustrate the multidimensional nature of Qur'anic digitalization, encompassing educational, technological, interpretive, and social dimensions. The literature demonstrates a clear evolution from early mobile-learning initiatives to complex AI-driven ecosystems and social-media-based interpretations. However, despite this progress, the reviewed works largely focus on individual applications or specific technological features without systematically categorizing their underlying business models. There remains a critical gap in understanding how Qur'anic digital businesses can be classified based on value propositions, user relationships, and socio-religious objectives. The present study addresses this gap by developing a taxonomy of digital business models for Qur'anic promotion and social entrepreneurship, thereby integrating technological innovation with religious authenticity and cultural context.

3. Research Methodology

This section outlines the research methodology. Given the novelty and

dynamic nature of Qur'an-promotion patterns with a social orientation, the study adopts a mixed qualitative–descriptive approach. This design enables both an in-depth exploration and conceptual richness of the phenomenon, while also providing a foundation for structuring and generalizing the findings. At its core, the methodology is anchored in the systematic development of a taxonomy, constructed through a multiple-case-study analysis. By leveraging multiple data sources and qualitative analytical techniques, the study extracts and validates business model patterns in Qur'anic digital businesses (QDBs).

The rationale for this approach lies in the inherent complexity of promoting Qur'anic concepts in the digital environment. This context encompasses advanced interactive technologies, including emerging trends such as, but not limited to, artificial intelligence; innovative and socially embedded business models; intricate intergenerational social interactions; the entrepreneurial and start-up ecosystem; alignment with jurisprudential principles across different Islamic branches; and, ultimately, the broader economics of Qur'an dissemination and promotion.

A purely quantitative method would not sufficiently capture the depth and qualitative mechanisms of this phenomenon, while an exclusively qualitative approach might lack structured generalizability. Accordingly, the study integrates multiple-case-study analysis to investigate leading fintech firms and taxonomy development to construct a systematic structure for understanding diverse patterns of AI-enabled business models. This combination offers a balanced integration of empirical observation and conceptual structuring.

3.1. Taxonomy and Pattern Development

This study was designed using the iterative approach proposed by Nickerson et al. (2013) and was conducted through four consecutive cycles. Figure 1 provides a summary of the iterative cycles presented in this study. The following section presents the four iterations of this study.

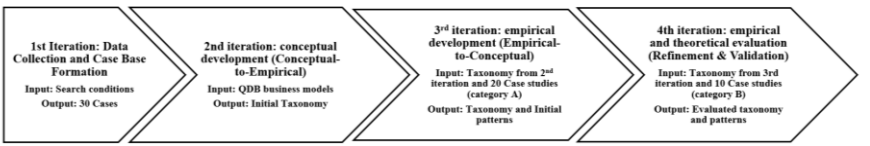

Figure 1. Framework for Business Model Pattern Classification Development Based on Nickerson et al. (2013)

3.1.1. First Iteration: Data Collection and Case Base Formation

Data were collected from the following three sources and stored in a structured database:

- Scholarly sources: To extract initial business model patterns and theoretical frameworks.
- Industry and consulting reports: To gain practical insights, understand market trends, and identify business-oriented challenges.
- Primary sources (websites, official presentations, AI search engines, executive interviews, and specialized podcasts): To obtain direct, up-to-date, and first-hand information from the companies themselves.

In this phase, keywords such as "Qur'an Promotion Business Model," "Qur'an Social Business Model," and "Qur'an Business Model" were searched on the web and via traditional and AI-based scholarly search engines. Reference frameworks, including the Business Model Canvas, as well as specific studies on value-creation patterns in Qur'anic promotion and dissemination mobile-application businesses, were identified, and their key dimensions were extracted to provide a foundation for subsequent analyses.

The unit of analysis in this study was defined as a "business model at the level of QDB" or an independent Qur'an-based product or service unit. The selection criteria for cases were as follows: the application had to meet all four of the following criteria in order to be selected.

1. Qur'anic core: The business had to be fundamentally and centrally based on the Qur'an, leveraging various technologies, including content dissemination and publishing, lifestyle services, interoperability, usage analytics, AI, and machine learning (e.g., natural language processing, computer vision, and predictive models), rather than merely using them as auxiliary tools.
2. Data accessibility: Sufficient and reliable information about various components of the business model had to be available (e.g., via reports, case studies, founder interviews, or company websites).
3. Identifiability and innovation: The company or service had to be recognizable and represent a clear innovation in Qur'anic business model practices.
4. Minimum number of installations: The selected application was required to have a minimum of 500,000 installations across all local and international mobile platforms.

For example, "*Muslim Pro*" is generally considered a lifestyle

application; however, it provides prayer times, a Qibla compass, full Qur'an text and audio, translations in multiple languages, and lifestyle content. For example, data concerning "*Quran Pro*" and its paywalled-content service were collected from academic articles, market analysis reports, and information available on the company's website and official presentations. These sources were then triangulated to construct a comprehensive understanding of its business model. Accordingly, it was selected as an independent analytical unit due to its alignment with the above criteria.

The outcome of this iteration was the formation of a case base of 30 QDBs, shown in Table 1. These cases were randomly divided into two categories:

- Development cases: Including 20 cases, which were used for the initial construction, refinement, and enrichment of the taxonomy.
- Evaluation cases: Including 10 cases, which were not utilized in the development process and were solely reserved for the final validation of the classification.

Table 1. Top Qur'anic applications worldwide. The top three scores in each column are highlighted in gray. Categories indicate first-iteration (A) and second-iteration (B). Download data and ratings are mainly based on Google Play and Apple Store platforms.

	App Name	Android (Download)	Rating	iOS (Download)	Rating	Core Digital Initiative Description	Category
١	Muslim Pro	100M	4.3	580K	4.7	Integrated platform combining recitation, translation, prayer tools, and premium subscription features.	A
٢	Quran Pro	1M	4.8	27.8K	4.8	High-quality curated recitations with multilingual translations and premium audio features.	A
٣	Quranly	1M	4.8	9K	4.9	Gamified daily Qur'an engagement with progress dashboards and habit-forming features.	A
۴	Tarteel	5M	4.7	7.8K	4.8	AI-powered recitation analysis providing real-time feedback for tajwīd accuracy.	A
۵	Quran by Quran.com	50M	4.7	4.3K	4.9	Multi-resource Qur'an interface integrating recitation, translation, *tafsīr*, and advanced search.	A
۶	Quran Majeed	10M	4.6	234K	4.8	Multilingual Qur'an interface with curated recitations and premium personalization tools.	A
٧	Tanin Vahy	200k	200k	-	-	*Tartīl* and Qur'an lifestyle app.	A
8	Islam360	10M	4.8	16.5K	4.8	Comprehensive search-based religious reference integrating Qur'an, *tafsīr*, and Hadith databases.	A
9	WeMuslim	۵۰M	4.۸	1.1K	4.9	Combined Qur'an services with prayer tools and devotional features in a unified platform.	A
10	BeHafizh	500K	4.7	-	-	Gamified memorization with spaced repetition and structured learning paths.	A
11	Bayan	1M	4.6	-	-	Structured learning modules, *tafsīr* lessons, and guided educational content.	A

	App Name	Android (Download)	Rating	iOS (Download)	Rating	Core Digital Initiative Description	Category
12	Habl al-Matin	۴M (Caffe Bazar)	4.7	-	-	Integrated platform combining Qur'an access, interpretive content, and community-based learning.	A
13	Al Quran	10M	4.9	866K	4.9	Simple, accessible Qur'an text with multi-language translations and bookmarking.	A
14	Golden Quran	5M	4.8	168.7K	4.7	Enhanced recitation experience with high-quality audio and personalized interface themes.	A
15	WeMuslim: Athan, Qibla&Quran	50M	4.8	1.1K	4.9	Multi-function worship toolkit integrating Qur'an recitation with athan and qibla features.	A
16	MyQuran Indonesia Lite	10 M	4.9	3.9 K	4.9	Resource-efficient Qur'an reader tailored for Indonesian users with offline access.	A
17	Ayah	5M	4.8	97.5K	4.8	High-fidelity Qur'an interface emphasizing readability, precision, and curated study tools.	A
18	Quran noor	۱M	4.8	12K	4.5	Provides multi-language access to the *Mushaf*	A
19	Qibla Connect: Qibla Direction	5M	4.6	18.2K	4.7	Utility-focused application providing accurate qibla direction, prayer times, and lightweight Qur'an access.	A
20	Quran for Android	50M	4.7	-	-	Open-source Qur'an reader emphasizing authenticity, offline access, and community-driven translations.	A
21	iQuran Lite	1M	4.6	22K	4.8	Minimalist Qur'an reader optimized for low-resource devices with essential navigation and translation features.	B
22	Islam: The Noble Quran	10M	4.8	-	-	Text-centric Qur'an application focusing on clear *Mushaf* presentation and classical translations.	B
23	Holy Quran	5M	4.7	140K	4.6	Basic Qur'an reading app offering offline *Mushaf* access and standard recitation support.	B
24	Quran with Urdu Translation	10M	4.8	15K	4.5	Qur'an reader specialized for Urdu-speaking users with synchronized translation and *tafsīr* excerpts.	B
25	Holy Quran with Tafsir	5M	4.7	95K	4.6	Integrated Qur'an and *tafsīr* platform enabling verse-level interpretive study.	B
۲۶	Panduan Muslim	10M	4.7	-	-	Comprehensive Islamic guide including Qur'an access, prayer times, qibla direction, and devotional content for Indonesians.	B
27	MyQuran AlQuran dan Terjemahan	10M	4.9	3.9K	4.9	Localized Qur'an application providing Bahasa Indonesia translation, *tafsīr* summaries, offline access, and lightweight performance optimized for mass adoption.	B
28	Al Quran Indonesia	50M	5	-	-	Widely adopted Indonesian Qur'an app offering *Mushaf* text, official Bahasa Indonesia translation, audio recitations, and offline reading capabilities.	B
۲۹	Al Quran Bengali	2.6M	4.9			Comprehensive Bengali Qur'an reader with multiple reciters, color-coded *tajwīd*, prayer times, qibla direction, bookmarks and audio download features.	B
۳۰	Quran For Kids, *Tarteel* — NOOR	1M	4.5	-	-	Interactive, adventure-based Qur'an learning for ages ~6–12 that uses quests and gamified lessons to teach basic Qur'anic reading and concepts.	B

3.1.2. Second Iteration: Conceptual Development (Conceptual-to-Empirical)

The taxonomy was developed through three iterations. The first iteration

followed a conceptual-to-empirical approach, in which the dimensions and characteristics of Qur'an-promotion digital business models were derived from the literature. Drawing on prior findings on business models and Qur'an promotion, as outlined in the related work section, six dimensions were identified, each comprising between two and nine characteristics, based on the analysis of 20 academic papers. A summary of the results is shown in Table 2. At this stage, by drawing on the systematic literature in the fields of the Qur'an, content, and digitalization, the theoretical foundations of the framework were established.

The key components of the business model for analysis were derived from Osterwalder's business model, including:

- Target Customer: older end-users, adult end-users, child end-users, Qur'anic institutions, Qur'an education centers, etc.
- Value Proposition: automation, predictive insights, for example, the recommendation of reciting Surah al-Jumuʿah and al-Munāfiqūn on Fridays, and personalized user experience.
- Value Capture: Revenue mechanisms (subscription-based models [SaaS], pay-per-transaction, success fees in competitions, etc.).

Table 2. Second iteration of Qur'an promotion business model dimension characteristics.

Meta-Dim.	Dimensions	Question	Characteristics
Target Customers (Who)	Market	To which market does the QDB sell?	B2B (10), B2C (30), B2S (Scholars) (6), B2C2C (Customer2Consumer) (2), B2Kids (1), B2LocalC (9)
Value Proposition (What)	Product/Service	What product or service is offered to customers?	Product (30), Service (1), PSS (3)
	Value Proposition	What value does the QDB offer?	Total solution provider (14), Customization (8), Cost efficiency (11), Access/facilitation (30), Time savings (18), Transparency (15), User experience (9), Gamified *ḥifẓ* and competition (5), Advanced in-depth study (3)
Value Capture (Why)	Revenue Model	How does the QDB generate revenue from its value proposition?	Advertisement (5), Donations (16), Licensing (13), Usage fee (15), Subscription (14)
	Payer	Who ultimately pays?	Consumer (10), Customer (17), Third party (4)
	Pricing	What are the main pricing mechanisms?	Pay-per-use (3), Fixed price (17), Free (20), Freemium (in-app purchase) (14)

3.1.3. Third Iteration: Empirical Development (Empirical-to-Conceptual)

The initial framework derived from the first cycle was applied to real-world cases of Qur'an-focused companies. Data from each case were coded

and subsequently compared to identify similarities and differences. A qualitative clustering technique was employed to group similar cases, and the main super-patterns as well as the associated sub-patterns were extracted. This cycle led to the refinement of the framework and the addition of new dimensions.

The study adopted an empirical-to-conceptual approach by applying the taxonomy developed in the first iteration to 12 Category A case studies. A case was randomly selected, and qualitative structured data analysis was performed (Miles et al. 2013). Case information was coded using empirically derived characteristics through within-case analysis (Yin 2014). Each case was then classified within the taxonomy, and, when necessary, additional characteristics and dimensions were incorporated until all cases were represented.

To extract Qur'an-related business models (BMs), the taxonomy was applied to the 12 cases through within-case analysis (Yin 2014). It was observed that some cases did not adhere to a single business model but employed a combination of multiple models. Consequently, more than one characteristic per dimension could apply to each BM innovator, diverging from the approach of Nickerson et al. (2013). For enhanced clarity and practical applicability, a second qualitative cluster analysis was conducted using these six patterns to inductively generate overarching patterns. This procedure resulted in three super-patterns, each encompassing shared characteristics of their underlying sub-patterns. In total, nine patterns were identified: three super-patterns and six underlying sub-patterns.

For example, in an empirical analysis of *Muslim Pro*, it was observed that freemium subscription models with outcome-based incentives function as a key revenue mechanism. Premium features, such as ad-free usage, advanced prayer reminders (*Tahajjud*, or night prayer, etc.), or personalized content, are unlocked only after subscription, providing measurable value to users in terms of convenience and engagement. Furthermore, accountability and transparency in AI-driven features, such as prayer time calculations, Qur'anic verse recommendations, and Hijri calendar adjustments, were identified as critical dimensions for governance, ensuring users can understand and trust the application's algorithmic outputs.

3.1.4. Fourth Iteration: Empirical and Theoretical Evaluation (Refinement and Validation)

In the final iteration, the framework underwent a comprehensive validation process to establish its academic rigor and practical relevance. This stage integrated empirical testing, theoretical assessment, and

benchmarking against established business model patterns to refine its structure and enhance its explanatory and prescriptive power.

- Empirical validation: Application of the framework to six new Category B case studies in order to assess its descriptive accuracy and explanatory power.
- Theoretical validation: Evaluation of completeness, robustness, and comprehensibility through structured focus group discussions with academic experts and industry practitioners.

4. Findings

The 30 selected QDBs exhibit diverse business models. Table 1 provides a summary of the services offered by these cases.

4.1. Taxonomy for QDB Models

The taxonomy derived for Qur'anic Digital Business Models (QDBMs) comprises three meta-dimensions and six constitutive dimensions, represented by a set of 28 distinct and recurring characteristics (see Table 4). 28 characteristics mirror established digital business model patterns, while others reflect domain-specific requirements unique to Qur'an-centered platforms. Complete QDBMs emerge as combinations of these characteristics, meaning that not every characteristic is novel on its own; rather, the novelty arises from their specific configuration and interaction within the Qur'anic digital context. Collectively, these characteristics form a comprehensive structure capable of capturing the functional, educational, cultural, and spiritual purposes that distinguish QDBMs from general-purpose digital services.

4.2. Business Model Patterns for Qur'anic Digital Platforms

The cross-case synthesis of the examined applications reveals three super-patterns and multiple sub-patterns that collectively characterize emerging Qur'anic Digital Business Models (QDBMs). These patterns reflect recurring configurations of value proposition logic, customer segment focus, and revenue mechanisms. The super-patterns demonstrate how contemporary Qur'anic platforms differentiate themselves through the integration of multiple services, the personalization of learning experiences, the cultural and lifestyle expansion of Qur'anic engagement, or mission-

driven accessibility models. The identified patterns are summarized in Figure 2, with further explanatory details provided in Table 3 and Table 4.

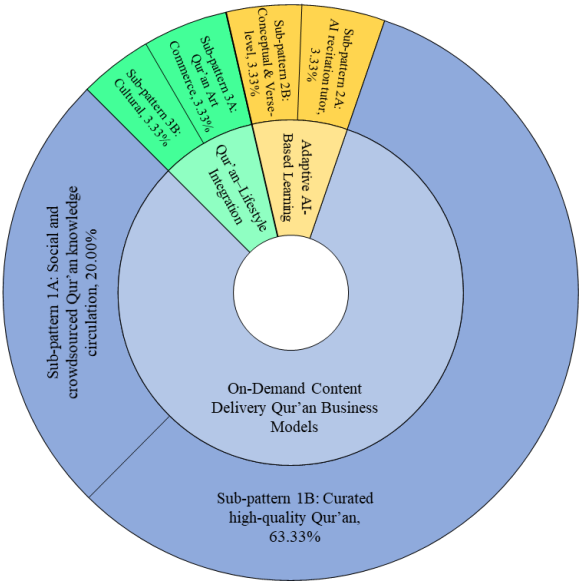

Figure 2. Sunburst taxonomy of business model patterns for Qur'an promotion. The first inner layer shows three super-patterns, and the second layer shows six sub-patterns and their respective percentages of all sub-patterns.

Table 3. Business model patterns for Qur'an promotion

	Super Pattern	Patterns	Sub-patterns
1	On-Demand Content Delivery Qur'an Business Models	Pattern 1A: Social and crowdsourced Qur'an knowledge circulation	Sub-pattern 1B1: International-oriented representation
		Pattern 1B: Curated, high-quality Qur'an content selection & representation	Sub-pattern 1B2: Niche-oriented representation
2	Adaptive AI-based personalized learning: Individualized Qur'an learning paths	Pattern 2A: AI recitation tutor (digital *tajwīd* coach)	–
		Pattern 2B: Conceptual and verse-level understanding support	–
3	Qur'an–lifestyle integration: Aesthetic & cultural extensions of Qur'anic engagement	Pattern 3A: Qur'an art commerce	–
		Pattern 3B: Cultural extensions of Qur'an content	–

4.2.1. Super Pattern 1: On-Demand Content Delivery Qur'an Business Models

Platformization QDBMs consolidate diverse Qur'an-related services within a single digital architecture. These business models are defined not by the introduction of entirely new content, but by the integration and interconnection of multiple value-adding content components, such as recitation, translation, interpretation, search, bookmarking, and multilingual capabilities, into a coherent user experience. This super-pattern combines a platform-centric value proposition, a broad customer base, and mixed revenue streams, including freemium access, subscription models, and marketplace commissions.

4.2.1.1. Pattern 1A: Social and crowdsourced Qur'an knowledge circulation

This sub-pattern incorporates community-generated knowledge into the platform's value proposition. Users, including both general audiences and specialists, contribute interpretations, reflections, and metadata. The customer segments are therefore two-sided, and revenue is often based on voluntary contributions or freemium access tiers. This aligns with crowdsourced knowledge models observed in other digital ecosystems. In some cases, this sub-pattern emphasizes free and equitable access to Qur'anic resources, often motivated by faith-based and socially oriented objectives. The value proposition includes interactive memorization tools, gamified challenges, and community-based learning structures, including the organization of interactive competitions in mosques and similar community spaces. Given its broad societal focus, the customer base spans children, teenagers, and adults alike. Revenue models are generally grounded in donations, NGO funding, or hybrid social-enterprise logic, occasionally supplemented by small-scale microtransactions or outcome-based services. This sub-pattern highlights the role of social motivation, community engagement, and gamified learning loops, aligning spiritual objectives with contemporary digital engagement mechanisms.

4.2.1.2. Pattern 1B: Curated, high-quality Qur'an content selection and representation

This sub-pattern emphasizes content curation and representational excellence as its core value proposition. QDBMs in this sub-pattern carefully select reciters, script styles, translators, and interpreters, while ensuring accurate linkage of each resource to the corresponding verses. Functional enhancements, such as rapid search tools, diverse and aesthetically refined fonts for text and translation, personalized recitation

pace adjustment, multilingual support, and detailed progress tracking and marking for daily study, further strengthen the offering. The customer base is broad, ranging from casual readers to daily reciters, while revenue models typically blend subscription income with gift-enabled subscription options. The emphasis here is not on new products but on superior orchestration of existing Qur'anic resources to maximize usability and user experience.

4.2.1.2.1. Sub-pattern 1B1: International-oriented representation

This sub-pattern primarily comprises content distribution models designed for global accessibility. Applications in this category offer standardized, language-diverse Qur'anic content intended for use by a wide international audience, regardless of geographic or cultural context. The emphasis is placed on universality, scalability, and broad linguistic coverage, enabling widespread adoption across different regions and user demographics.

4.2.1.2.2. Sub-pattern 1B2: Niche-oriented representation

This sub-pattern includes content distribution models tailored to specific linguistic, cultural, or user-group preferences. Typical examples include mobile Qur'anic applications localized for highly populated Muslim countries, such as Pakistan, Indonesia, and Iran, developed in native languages and aligned with local reading traditions. Additionally, this category encompasses specialized applications designed for distinct user segments, including children-oriented Qur'anic learning platforms, as well as tools intended for advanced study and in-depth analysis by religious scholars, theologians, philosophers, and researchers in Islamic studies. The defining characteristic of this sub-pattern is its targeted approach, prioritizing relevance and depth over broad generalization.

4.2.2. Super Pattern 2: Adaptive AI-Based Personalized Learning: Individualized Qur'an Learning Paths

AI-driven QDBMs revolve around the creation of personalized and adaptive learning experiences, enabling users to achieve precise skill development in recitation and comprehension. The value proposition centers on real-time feedback, adaptive difficulty adjustment, and machine-learning-based profiling. The primary customer segments include committed learners and reciters, while the dominant revenue logic resembles educational SaaS models, particularly subscription-based structures and premium add-on features.

4.2.2.1. Pattern 2A: AI recitation tutor (digital tajwīd coach)

This sub-pattern provides real-time audio analysis and corrective

feedback, effectively functioning as a digital *tajwīd* instructor. The value proposition is accuracy-oriented and feedback-rich; customer segments include dedicated learners and semi-professional reciters; and premium subscriptions typically underpin the revenue model.

4.2.2.2. Pattern 2B: Conceptual and verse-level understanding support

This sub-pattern focuses on comprehension rather than recitation. The value proposition includes instant conceptual clarification, *tafsīr* suggestions, and verse-linked narrative or contextual identification. Users are primarily knowledge-oriented learners, and monetization commonly relies on subscription-based access to premium interpretive tools.

4.2.3. Super Pattern 3: Qur'an–Lifestyle Integration: Aesthetic and Cultural Extensions of Qur'anic Engagement

The third super-pattern expands Qur'anic engagement beyond textual interaction into lifestyle-embedded experiences, emphasizing cultural, aesthetic, and artistic value creation. Rather than positioning the Qur'an solely as content to be consumed, these platforms transform it into an integrated component of a user's daily cultural and aesthetic life. The value proposition centers on artistic representations of verses—such as digital calligraphy, personalized artwork, poetry-linked verse experiences, posters, and customizable visual themes. Customer segments primarily include lifestyle-oriented users, art enthusiasts, younger audiences, and religious-art communities. The revenue model reflects typical long-tail economics, including niche art sales, commissions on custom orders, and digital artwork monetization.

4.2.3.1. Pattern 3A: Qur'an art commerce

This pattern represents marketplaces for Qur'an-inspired artistic products. The value proposition is built on verse-based artwork; customer segments consist of art lovers and niche cultural buyers; and revenue stems from direct sales or platform commissions.

4.2.3.2. Pattern 3B: Cultural extensions of Qur'an content

This sub-pattern enriches Qur'anic engagement through the integration of poetry, literature, and historical narratives associated with specific verses. Users are typically youth and culture-oriented audiences seeking interpretive depth and artistic inspiration. Monetization is frequently achieved through premium content access or subscription offerings.

Table 4. Relation of QDBs and business model patterns

	Super pattern	On-Demand Content Delivery Qur'an business models			Adaptive AI-based personalized learning		Qur'an-lifestyle integration	
	Pattern / QDBs	pattern 1A: Social and crowdsourced Qur'an knowledge circulation	pattern 1B: Curated, high-quality Qur'an content selection and representation — Sub-pattern 1B1: International-Oriented Representati	pattern 1B: Curated, high-quality Qur'an content selection and representation — Sub-pattern 1B2: Niche-Oriented Representation	pattern 2A: AI recitation tutor (Digital *Tajwīd* coach)	pattern 2B: Conceptual and verse-level understanding support	pattern 3A: Qur'an art commerce	pattern 3B: Cultural extensions of Qur'an content
١	Muslim Pro		*					
٢	Quran Pro		*					
٣	Quranly	*						
٤	Tarteel	*						
٥	Quran by Quran.com		*					
٦	Quran Majeed		*					
7	Tanin Vahy						*	*
8	Islam360		*					
9	WeMuslim	*						
10	BeHafizh				*			
11	Bayan					*		
12	Habl al-matin		*					
13	Al Quran		*					
14	Golden Quran		*					
15	WeMuslim: Athan, Qibla&Quran	*						
16	MyQuran Indonesia Lite			*				
17	Ayah	*						
18	Quran noor		*					
١٩	Qibla Connect: Qibla Direction		*					
٢٠	Quran for Android		*					
٢١	iQuran Lite		*					
٢٢	Islam: The Noble Quran		*					
٢٣	Holy Quran		*					
٢٤	Quran with Urdu Translation			*				
٢٥	Holy Quran with Tafsir			*				
٢٦	Panduan Muslim			*				
٢٧	MyQuran AlQuran dan Terjemahan		*					
٢٨	Al Quran Indonesia			*				
٢٩	Al Quran Bengali			*				
٣٠	Quran For Kids, Tarteel—NOOR			*				

5. Conclusion

QDBs have become a central medium through which contemporary Muslim societies, especially younger generations, engage with the Qur'an, learn it, and integrate its guidance into their daily lives. However, despite their widespread use, their development costs necessitate underlying sturdy, robust, and sustainable business model configurations that shape the structure, priorities, and long-term viability of these platforms, which have remained largely unexplored. By examining seventeen leading Qur'anic digital mobile platforms and applying a structured taxonomy-building approach, this study identifies the core strategic logics that govern how these applications create, deliver, and capture value within religiously sensitive digital ecosystems.

The cross-case analysis is organized around three foundational business model components, including value proposition, customer segments, and value capture. Three main super-patterns are extracted: on-demand content delivery, adaptive AI-based personalized learning, and Qur'an–lifestyle integration. The first and most dominant pattern illustrates that curated, high-fidelity Qur'an delivery, through careful selection of reciters, scripts, translations, and multilingual interfaces, remains the backbone of most QDBs. The second pattern demonstrates how advancements in artificial intelligence are transforming recitation training and conceptual understanding, enabling unprecedented levels of personalized learning. Finally, the third, emerging pattern shows that Qur'anic engagement is expanding beyond textual interaction toward aesthetic, cultural, and lifestyle-embedded experiences, which in some cases extend to physical artifacts and demonstrate O2O (online-to-offline and offline-to-online) user behaviors.

These patterns collectively reveal several structural dynamics within the Qur'anic digital ecosystem. First, QDBMs negotiate a continuous balance between authenticity and innovation, ensuring textual and recitational accuracy while leveraging state-of-the-art technologies. Second, they accommodate diverse user groups, from casual readers to scholars, illustrating that spiritual digital engagement is inherently multi-segmented. Third, revenue models exhibit significant heterogeneity, ranging from freemium and subscription models to donation-funded and long-tail art-commerce strategies, confirming that QDBMs operate within both commercial and faith-based paradigms.

The findings of this study allow for the articulation of a three high-level framework for understanding and guiding the development of Qur'anic digital platforms. At the content level, platforms must ensure rigorous authenticity, high-quality representation, and pedagogically sound structuring of Qur'anic material. At the technological level, developers should align system architecture with personalization capabilities, multilingual access, and secure, ethically compliant data practices. At the strategic level, stakeholders should adopt business models that balance sustainability with spiritual mission—combining transparent monetization mechanisms with the broader objective of facilitating meaningful Qur'anic engagement and ensuring long-term business model resilience under changing economic conditions.

Finally, this study provides the first comprehensive, empirically grounded mapping of business model patterns in Qur'anic digital applications. By illuminating their strategic configurations and operational logics, the research offers both a conceptual foundation and practical guidance for developers, policymakers, and religious institutions seeking to design future-ready Qur'anic digital ecosystems that are authentic, accessible, and sustainable.

Declarations

Funding: No funding was received for conducting this study.

Conflict of Interest: The authors declare no competing interests.

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