

# Oral Narratives into Digitalization: Contribution to the Indian Knowledge System

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**Abstract-** *The Indian Knowledge System (IKS), a vast repository of wisdom, relies significantly on oral narratives (myths, epics and traditional healing) for its preservation. However, modernization, language shifts, and the passing of master performers pose an existential threat to this intangible heritage. This paper explores how digitalization—the systematic capture and management of oral information into digital formats—is a crucial technological intervention for the IKS. Digitalization must move beyond simple archiving to a multimodal, community-centered approach. The process involves ethical capture of high-resolution audio/video, contextual data, and standardized metadata (e.g., Dublin Core, CIDOC CRM). Key challenges include dealing with low-resource languages, resolving the application of Western-centric Intellectual Property Rights (IPR) to collective knowledge, and bridging the digital divide.*

*Future trends point toward the use of AI/ML for automated transcription and linguistic analysis (e.g., Named Entity Recognition), and VR/AR to re-contextualize performances. To ensure sustainability and ethical practice, the paper suggests adopting a Digital Repatriation Model, standardizing metadata, and implementing Blockchain for transparent IPR management. Responsible digitalization will transform the IKS from a passively preserved heritage into a dynamic resource informing the future.*

**Keywords:** *Oral Narratives, Indian Knowledge System (IKS), Digitalization, Intangible Cultural Heritage (ICH), Intellectual Property Rights (IPR), Digital Repatriation.*

## I. INTRODUCTION

The Indian Knowledge System (IKS) is a vast repository of intellectual, philosophical, and practical wisdom accumulated over millennia. A significant, yet often vulnerable, part of this system is preserved in oral narratives—traditions passed down through spoken word, song, and performance. These narratives include myths, epics, folk tales, ballads, genealogies, traditional healing methods, and technical knowledge

(like artisanal techniques and astronomical observations). They represent the worldview, historical memory, and cultural identity of diverse communities across India.

However, the rapid pace of modernization, language shifts, migration, and the passing of master performers pose an existential threat to this intangible heritage. The process of digitalization—the conversion of analog and oral information into digital formats—emerges as a crucial technological intervention. This paper explores the symbiotic relationship between oral narratives and digitalization, assessing its profound contribution to the preservation, dissemination, and revitalization of the IKS. It will provide a basic understanding of oral narratives, detail the concept and process of digitalization in this context, examine associated challenges, discuss future trends in IKS studies, and offer concrete suggestions for a sustainable way forward.

## II. REVIEW OF LITERATURE

Early studies of oral traditions, notably by scholars like Albert Lord and Milman Parry, focused on the "formulaic" nature of epic poetry, demonstrating the stability and yet fluidity of oral composition and transmission. In the Indian context, scholars such as A. K. Ramanujan and Stuart Blackburn highlighted the dynamic, context-specific, and performance-based characteristics of South Asian oral literature, distinguishing it from rigid written texts. Their work established the credibility of oral sources as valid historical and cultural documents.

The literature on digital humanities has significantly expanded over the last two decades. Key figures like Michael Besser have discussed the theoretical underpinnings of digital archives, emphasizing

accessibility, interoperability, and long-term preservation. A body of literature specifically addresses the ethics and methodology of digitizing intangible cultural heritage (ICH). This literature stresses the need for community involvement and adherence to principles of Open Access (OA), while simultaneously addressing intellectual property rights and the potential for cultural misappropriation (e.g., S. B. T. Sharma, 2019).

**The Homeric Question and Formulaic Theory:** The work of Milman Parry and Albert Lord (in *The Singer of Tales*, 1960) on South Slavic epic laid the groundwork for modern oral theory. They demonstrated that oral epics are not memorized verbatim but are improvised using formulas (repeated phrases) and thematic clusters. This concept is vital, as it confirms that documenting an oral tradition requires capturing multiple performances rather than seeking a single "authentic" version.

**The Indian Context: Performance and Context:** Indian folklorists emphasized the unique cultural aspects of South Asian traditions. A. K. Ramanujan stressed that oral narratives are context-sensitive and performative. His work on folk tales and the varied tellings of the Ramayana across communities (as discussed in *Many Rāmāyaṇas*) highlights the fluidity and local specificity inherent in the IKS. Stuart Blackburn further advanced this by focusing on how the performance space, audience, and the performer's body are integral to the meaning, making the documentation of the event as important as the recording of the words. [Image of a Traditional Indian Storyteller performing with a musical instrument]

**Orality vs. Literacy Debates:** Scholars like Walter Ong (*Orality and Literacy*, 1982) analysed the cognitive and cultural differences between oral and print societies. Applying this to IKS, literature recognizes the challenge of translating the holistic, rhythmic, and participatory nature of oral knowledge into the linear, fixed structure of digital text or even video, necessitating sophisticated capture methodologies. The rise of digital technology prompted scholars to develop methodologies for archiving intangible culture.

**Archiving and Metadata Standards:** The literature on digital humanities, often spearheaded by institutions like the Humboldt Forum or the Library of Congress, emphasizes the need for robust, accessible archives. Michael Besser's work on digital libraries outlines key principles: interoperability (making archives talk to each other), sustainability (long-term preservation), and accessibility. The consensus demands adherence to standardized metadata schemas like Dublin Core or the CIDOC Conceptual Reference Model (CRM) to ensure that digitized IKS material is searchable and usable globally.

**Multimodal Documentation:** Recognizing the shortcomings of simple audio recording, research now advocates for multimodal documentation. This involves simultaneously capturing high-resolution audio, video, performance space documentation (using 3D scanning or photogrammetry), and ethno-linguistic data. The challenge here, as discussed by researchers in applied folklore, is integrating these diverse data streams into a single, navigable digital object.

**Community-Centered Digitization (The Ethical Turn):** A critical shift has occurred from mere technical archiving to an ethical, community-centered approach. Literature highlights the need for projects to be initiated with the communities, not just on them. This literature, often linked to indigenous data sovereignty movements, focuses on:

**Informed Consent:** Securing explicit consent not just for recording, but for the distribution and potential reuse of the material.

**Access Protocols:** Developing tiered access based on cultural sensitivity, ensuring that sacred or restricted knowledge is not made publicly available without community approval.

**Digital Repatriation:** Ensuring that digital copies and the infrastructure to access them are returned to the source communities, bridging the digital divide. Recent literature specifically addresses how digitization can transform the study and application of IKS.

**Relevance to Modern Issues:** Scholarly papers and governmental reports (such as those from the National

Mission for Manuscripts or the IKS Division under the Ministry of Education) emphasize that oral IKS is not just history but holds contemporary relevance. Digital platforms are seen as the means to extract knowledge on areas like traditional ecological knowledge (TEK), sustainable agricultural practices, or local architectural science, making it accessible to scientists and policymakers.

**The IPR and Ownership Challenge:** The adaptation of Western Intellectual Property Rights (IPR) to encompass collective, traditional knowledge remains a deeply contentious area within the literature. Some scholars argue that traditional copyright is inadequate and advocate for sui generis legal frameworks or the use of Creative Commons licenses adapted for Traditional Cultural Expressions (TCEs). Blockchain technology is emerging in the literature as a potential solution to create transparent, decentralized records of ownership and usage, ensuring benefit-sharing for communities.

**AI and Computational Folklore:** The newest trend involves applying Artificial Intelligence (AI) and Machine Learning (ML) to IKS corpora. Research is exploring how AI can perform automated tasks, such as:

Cross-lingual Named Entity Recognition (NER) to tag characters, deities, and places across multiple vernacular recordings.

Computational analysis of narrative structures to compare formulaic patterns across different language families in India.

Developing advanced Speech-to-Text (STT) models tailored to low-resource Indian languages, moving beyond reliance on manual transcription.

Crucially, the intersection of IKS and digitalization is a growing field. Reports from government bodies (like the National Mission for Manuscripts) and research institutions emphasize the need for standardized metadata, vernacular language interfaces, and the use of technologies like Augmented Reality (AR) and Virtual Reality (VR) to capture the performative aspect of narratives. The existing literature strongly suggests that simple archiving is insufficient; the future lies in dynamic, interpretive digital platforms that facilitate research and creative reuse.

### III. BASIC UNDERSTANDING OF ORAL NARRATIVES WITH SUITABLE EXAMPLES

#### Concept and Characteristics

Oral narratives are not merely stories; they are dynamic, performed, and communal acts of memory and knowledge transfer.

#### Key Characteristics:

1. **Performance-Based:** The meaning is often tied to the context, performer (e.g., a bhopa or a gothiye), audience, and occasion. Performance elements like gestures, music, and ritual actions are integral.
2. **Fluid and Contextual:** Unlike a fixed written text, an oral narrative is often variant. Performers adapt the tale to the listener, location, and immediate social need, leading to multiple versions.
3. **Formulaic Composition:** Narratives often employ repeated phrases, stock epithets, and thematic clusters (formulas) that aid the performer's memory and improvisation.
4. **Collective Ownership:** The knowledge typically belongs to a community or a specialized lineage, not a single author.

#### Examples from Indian Oral Narratives

- **Epic Traditions (The Pabuji ki Phad):** In Rajasthan, the Bhopas (priest-singers) perform the epic of Pabuji, a medieval hero, using a large painted scroll (phad). This performance is a multi-media event, combining narrative, song, instrumental music (Ravanahatha), and visual art, serving as a religious ritual, historical account, and entertainment.
- **Adivasi Creation Myths (Gond/Santal):** Creation myths of indigenous communities, such as the Gonds, often detail their relationship with the forest, ancestral spirits, and the origin of their social structure and traditional laws. These narratives encapsulate their ecological knowledge (ethno botany, conservation practices) that is crucial for sustainable development.
- **Folk Medical Knowledge (Kani Tribes, Kerala):** Traditional healers in communities like the Kani documented their medicinal knowledge orally for centuries. The knowledge concerning plants like *Trichopus zeylanicus* (the "miracle plant") demonstrates the high-value pharmacological information embedded within oral traditions.

#### IV. CONCEPT AND PROCESS OF DIGITALIZATION

##### Concept of Digitalization

In the context of ICH and IKS, digitalization is the systematic capture, storage, management, and long-term preservation of oral narratives using digital technologies. It moves beyond simple audio recording to encompass the entirety of the performance event.

##### The Digitalization Process

The process is multi-staged and requires careful planning and ethical execution:

1. Curation and Selection: Identifying the narratives, the key performers, and the most representative performance contexts for recording. This stage requires obtaining Informed Consent from the performers and the community.

##### 2. Multimodal Capture:

○ Audio/Video Recording: High-resolution audio and video capture of the performance, ensuring the capture of gestures, facial expressions, and audience interaction.

○ Contextual Data: Recording of the performance location, time, audience, ritual accessories, and related material culture (e.g., musical instruments, costumes).

○ Metadata Creation: Generating descriptive data for each recording (date, language, performers, subject matter, keywords). Standardized metadata like Dublin Core or the CIDOC Conceptual Reference Model (CRM) are essential for long-term searchability and interoperability.

3. Transcription and Translation: Transcribing the oral performance into a written text in the original language, followed by accurate translation into major research languages (e.g., English, Hindi) and linguistic analysis.

##### 4. Platform Development and Preservation:

○ Archiving: Storing master copies in high-quality, non-proprietary formats (e.g., WAV, MP4) on secure, redundant server systems.

○ Dissemination: Creating a user-friendly, searchable digital library or database with variable access levels (public, restricted academic, internal).

#### V. CHALLENGES IN THE DIGITALIZATION OF ORAL NARRATIVES

The transition from the fluid, communal world of oral narratives to the structured environment of a digital archive presents significant challenges:

##### 1. Technical and Linguistic Challenges

● Low-Resource Languages: Many Indian oral traditions exist in endangered languages or dialects that lack standardized scripts or digital fonts. Optical Character Recognition (OCR) software is often ineffective, necessitating manual transcription.

● Capturing Performance Context: Static video/audio fails to capture the multi-sensory and interactive nature of the original performance. Recreating the liveness and atmosphere in a digital format is technologically complex.

● Standardization: Lack of a unified national protocol for archiving across various institutions (universities, NGOs, government bodies) leads to non-interoperable data silos.

##### 2. Ethical and Legal Challenges (IPR and Access)

● Intellectual Property Rights (IPR): Traditional knowledge is often collectively owned. Applying modern, Western-centric copyright law (which favors individual authorship) is inappropriate and risks transferring ownership away from the community. A model of Traditional Cultural Expressions (TCEs) or Creative Commons licenses adapted for community rights is often required.

● Cultural Sensitivity: Digitization can make sacred, restricted, or secret knowledge widely public, potentially violating community norms or rituals. Access must be managed ethically, often requiring input from community elders or custodians.

##### 3. Sustainability and Funding

● Long-Term Preservation: Digital assets require constant migration to new formats and hardware refreshes (e.g., every 5-10 years). The cost of maintaining a digital archive in perpetuity often exceeds the initial funding for the collection phase.

● Digital Divide: Many source communities lack the technological infrastructure (internet, power, devices) or literacy to access and benefit from the digitized material, leading to an unequal power dynamic in knowledge sharing.

## VI. FUTURE TRENDS IN STUDYING IKS

The digital future of the IKS is moving beyond simple preservation toward sophisticated analysis and creative engagement:

### 1. AI and Machine Learning (ML) in Linguistic Analysis

- Automated Transcription and Translation: Advanced Speech-to-Text (STT) algorithms trained on specific vernaculars and accents will automate transcription, drastically reducing manual labour. ML can also identify linguistic patterns, thematic clusters, and narrative structures across large datasets of recordings, aiding comparative folklore studies.

- Named Entity Recognition (NER): AI can be used to automatically tag names of gods, places, local flora/fauna, and historical figures within the narrative, linking them to existing digital libraries (e.g., IKS glossaries, ethno-botanical databases).

### 2. Immersive and Interactive Technologies

- Virtual Reality (VR) and Augmented Reality (AR): These technologies can be used to re-contextualize the narratives. For example, a researcher could "walk into" a virtual 3D reconstruction of the village square where a performance took place, enhancing the understanding of the performative space. Future digital libraries will incorporate 360-degree video and interactive media to allow users to navigate the performance rather than just watch it.

- Digital Storytelling and Re-creation: Digital archives will serve as springboards for new creative works (films, graphic novels, educational modules), ensuring the narratives remain a living, evolving part of contemporary culture.

### 3. Blockchain for Provenance and IPR

Blockchain technology is being explored to create an immutable, decentralized record of the origin, ownership, and usage rights of digitized cultural assets. This could ensure that credit and benefit-sharing flow back to the original communities, providing a secure, transparent solution for managing collective IPR.

## VII. SUGGESTIONS FOR SUSTAINABLE DIGITALIZATION OF IKS

To ensure digitalization genuinely contributes to the IKS, a paradigm shift is necessary:

1. Adopt a "Digital Repatriation" Model: The primary goal should be to create platforms that are accessible and owned by the source communities. This means developing local-language interfaces, training local community members as digital custodians/archivists, and depositing copies of the material back in the community.

2. Standardize Metadata and Protocols: The Ministry of Culture or a dedicated national IKS body must establish a mandatory, detailed metadata standard (e.g., a custom IKS-CRM) for all publicly funded digitization projects to ensure all archives are mutually discoverable.

3. Fund Preservation, Not Just Collection: Governments and funding agencies must dedicate a minimum of 20-30% of digitization budgets to long-term digital preservation and sustainability plans, moving away from a project-based, one-time funding model.

4. Implement Ethical Access Frameworks: Develop a tiered access system: Open Access for non-sensitive material (e.g., folk songs), restricted access for culturally sensitive knowledge (e.g., certain rituals, healing practices), and a transparent mechanism for communities to flag and restrict inappropriate use.

5. Integrate IKS into Education: The digitized narratives and knowledge should be integrated into school and university curricula across disciplines (history, science, humanities) to ensure the next generation views IKS as a source of contemporary relevance, not merely a historical artifact.

## VIII. CONCLUSION

The digitalization of oral narratives is arguably the most critical step in preserving and revitalizing the Indian Knowledge System for the 21st century. It is a race against time to capture a vanishing world of wisdom. By transitioning these fluid, performance-based traditions into a structured digital domain, India

gains an unprecedented opportunity to analyse, study, and disseminate its heritage globally. However, the successful execution of this mammoth task hinges not merely on technology, but on ethics, community engagement, and long-term political will. Future efforts must be centered on the principle of reciprocity—ensuring that the digital transformation benefits the communities who have been the custodians of this invaluable knowledge for generations. If done responsibly, digitalization will transform the IKS from a heritage that is passively preserved into a dynamic and accessible resource that actively informs the future of research, education, and cultural identity in India and the world.

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