

## CHAPTER-27

# Digital transformation of Bharatiya languages: A new era of linguistic empowerment

Kolupula Prashanth

Research Scholar, Department of Linguistics, Suravaram Pratapa Reddy Telugu University,  
Hyderabad

[prashantkolupula2025@gmail.com](mailto:prashantkolupula2025@gmail.com)

<https://doi.org/10.66483/jsp.2026.001.ch27>

## ABSTRACT

For decades, the digital divide in India was defined by language. While the nation progressed technologically, those proficient only in Bharatiya languages often found themselves as "digital outsiders." However, with the advent of Artificial Intelligence (AI) and Natural Language Processing (NLP), a historic shift is occurring. This paper examines the multi-dimensional transformation of Indian languages—specifically focusing on the Bhashini mission, the evolution of Telugu in the digital sphere, and the role of technology in preserving India's civilizational knowledge.

## 1 Introduction: The Linguistic Fabric of India

India is a linguistic superpower, home to 22 scheduled languages and over 19,000 dialects. Language is not just a tool for communication in India; it is the repository of culture, traditional medicine, and philosophical wisdom. Despite this richness, the early internet was almost entirely English-centric.

The current "Digital Transformation" aims to move from a "Translate to English" model to a "Think in Mother Tongue" model. This is the foundation of Linguistic Democracy, where a citizen's progress is not limited by their knowledge of a foreign language.

## 2 The Evolution of Telugu in the Digital Ecosystem

Telugu, often called the "Italian of the East," serves as an excellent case study for digital transformation.

**The Unicode Revolution:** Earlier, Telugu digital content was fragmented due to non-standard fonts. The adoption of Unicode and tools like the "Google Indic Keyboard" allowed millions of Telugu speakers to express themselves on social media, leading to a massive explosion in Telugu YouTube content, blogs, and news portals.

**Telugu Wikipedia (Tewiki):** With over 100,000 articles, the Telugu Wikipedia is a prime example of community-driven digital preservation, providing high-quality educational content in the mother tongue.

**Social Media Influence:** Today, Telugu is one of the fastest-growing languages on platforms like X (formerly Twitter) and Instagram, proving that digital spaces are no longer English-only zones.

## 3 Bhashini: Building Digital Public Infrastructure

The Government of India's Bhashini Mission is the most ambitious language project in the world. It treats language technology as a "Public Good."

### 3.1 Real-Time Voice Translation

Bhashini's AI models are designed to handle the "Speech-to-Speech" challenge. For example, a farmer in Telangana can speak in his native dialect to a centralized helpdesk; the AI translates

his Telugu speech into English for the expert, and the expert's English response is delivered back to the farmer in clear, natural-sounding Telugu.

### **3.2 Bhasha Daan: Crowdsourcing the Future**

A unique feature of this transformation is Bhasha Daan. Citizens are voluntarily contributing voice samples in various dialects (e.g., Rayalaseema, Telangana, and Coastal Andhra accents). This massive dataset ensures that AI doesn't just understand "Bookish Telugu" but also the "Living Telugu" spoken on the streets.

## **4 Education and NEP 2020: The Role of 'Anuvadini'**

The National Education Policy (NEP) 2020 emphasizes learning in the mother tongue. Digital tools are making this a reality in higher education.

**Anuvadini AI:** This tool is being used by AICTE to translate technical textbooks. Complex subjects like "Quantum Physics" or "Artificial Intelligence" are now available in Telugu, Marathi, and Tamil.

**SWAYAM and NPTEL:** Thousands of hours of video lectures from premier institutes like IITs are being subtitled and dubbed into regional languages using AI, democratizing elite education.

## **5 Judiciary and Governance: Justice in Local Language**

Justice is only meaningful when it is understood. Two major tools are leading this change:

**SUVASH (Supreme Court Vidhik Anuvaad Software):** This AI-driven tool translates Supreme Court judgments into regional languages. This reduces the litigant's dependence on intermediaries and makes the legal process transparent.

**Land Records (Meebhoomi & Bhubharathi):** In Telugu states, the digitization of land records in the native script has reduced corruption and empowered rural populations to verify their assets via mobile phones.

## **6. Digital Humanities: Preserving the Past**

India has the world's largest collection of ancient manuscripts. Digital transformation is ensuring they are not lost to time.

**OCR for Ancient Scripts:** Optical Character Recognition (OCR) technology is being trained to read old Telugu scripts (Prabandha style) and Sanskrit Shlokas.

**The C.P. Brown Library Example:** The digitization of rare books and manuscripts in libraries like the C.P. Brown Library in Kadapa has made Telugu literary history accessible to researchers globally through the "Digital Library of India."

## **7. Technical Challenges: The Road Ahead**

While we have come far, significant hurdles remain:

**Dialect Mapping:** AI still struggles with the subtle nuances between a Srikakulam dialect and a Mahbubnagar dialect.

**Script Barriers:** Many Indian languages share similar sounds but different scripts. Developing "Cross-Lingual" models is a technical necessity.

**Hardware Localization:** Most keyboards and interfaces are still designed for Western users. We need more "Indic-native" hardware designs.

## **8. The Future: BharatGPT and Sovereign AI**

By 2026, the goal is Sovereign AI. Unlike Western models (like ChatGPT), BharatGPT is being trained on Indian cultural values, idioms, and local contexts. It understands that a word in Telugu might have a deep cultural meaning that an English translation cannot capture.

## **9. Conclusion**

The digital transformation of Bharatiya languages is not just a technological achievement; it is a Cultural Renaissance. It is about reclaiming our identity in the virtual world. When

technology speaks the language of the people, it ceases to be a luxury and becomes a tool for mass empowerment.

By integrating Bhashini, Anuvadini, and Digital Humanities, India is creating a roadmap for the world on how to modernize without losing one's roots. As the saying goes, "Desha Bhashalandu Telugu Lessa" (Among the nation's languages, Telugu is the best)—and in the digital age, every Bharatiya language is set to be the "best" for its people.

## REFERENCES

Ministry of Electronics & IT (MeitY) - National Language Translation Mission (NLTM) Guidelines.

AICTE - Technical Education in Regional Languages Report.

Bhashini Samudaye - Open Source Dataset Documentation.

UNESCO Report on Indigenous Languages and Digital Presence.

## YOUR DISSERTATION DESERVES RECOGNITION, NOT A PLACE IN A STOREROOM

### Publish Your Dissertation as a Book through the Emerging Scholars Series

Transform your thesis or dissertation into a professionally published scholarly work, boosting its academic visibility and impact.

#### Benefits

-  ISBN Registration\*
-  Crossref DOI Assignment
-  ORCID Integration
-  Google Scholar Discoverability
-  Enhanced Citation Opportunities
-  Wider Academic Reach and Recognition
-  Long-Term Preservation and Accessibility

#### Publication Options

| Jnanasetu Repository                                                                                                                                                    | Jnanasetu Repository<br>Publication with an ISBN                                                                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>✓ Crossref DOI Assignment</li><li>✓ Online Archiving and Preservation</li><li>✓ Academic Visibility</li><li>✓ Citations</li></ul> | <ul style="list-style-type: none"><li>✓ ISBN Registration</li><li>✓ Crossref DOI Assignment</li><li>✓ Professional Book Publication</li><li>✓ Global Accessibility</li><li>✓ Academic Visibility</li><li>✓ Citations</li></ul> |

### Looking to Publish Research Articles?

Researchers and scholars may also submit manuscripts to **Jnanasetu Journals** for quality-focused scholarly publication.

- ✓ Peer-Reviewed Journals
- ✓ DOI Assignment
- ✓ Open Access Publishing
- ✓ Academic Visibility
- ✓ Timely Editorial Processing

#### We Also Publish

-  Edited Books
-  Scholarly Monographs
-  Conference Proceedings
-  Academic Journals

#### For more details:

|            |                                                                      |                                                                                    |
|------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Press      | <a href="http://jnanasetupress.com">jnanasetupress.com</a>           | <a href="mailto:support@jnanasetupress.com">support@jnanasetupress.com</a>         |
| Repository | <a href="http://jnanaseturepository.com">jnanaseturepository.com</a> | <a href="mailto:editor@jnanaseturepository.com">editor@jnanaseturepository.com</a> |
| Journals   | <a href="http://jnanasetujournals.com">jnanasetujournals.com</a>     | <a href="mailto:editor@jnanasetujournals.com">editor@jnanasetujournals.com</a>     |