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Adopting an ICT Village in Rural Assam: Prospects, Opportunities and Challenges

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Abstract

Rural Assam is undergoing a quiet but steady digital shift, driven by expanding mobile connectivity, government digital-service reforms and increasing awareness among villagers about the value of online services. In this context the idea of building an ICT Village a digitally enabled village where technology supports governance, agriculture, education, health and livelihoods offers a practical path toward inclusive development. What such a model could mean for Assam is explored by outlining the opportunities and prospects it can unlock, discussing the real challenges on the ground and presenting a short, data-backed example from the state's early digital village initiatives. When implemented with strong community ownership, language-appropriate content and sustainable infrastructure, ICT villages have the potential to bridge long-standing development gaps in Assam.

Keywords: Digitalisation, Connectivity, Livelihoods, Governance, ICT Village

Introduction

The rural landscape of Assam is shaped by smallholder farming, dispersed settlements, tea garden communities, limited access to healthcare and varying educational opportunities. Yet daily life in these villages is increasingly touched by digital technology. People use mobile phones to make UPI payments, communicate with relatives or watch short videos. However, digital use often remains personal rather than developmental. An ICT village seeks to change this by transforming digital tools into public infrastructure a way for villagers to access essential services, learn skills, benefit from digital banking and improve market access for agricultural products.

The timing for such an idea is favourable. Assam has seen expanded 4G coverage, BharatNet fibre connectivity reaching gram panchayats, and rapid adoption of digital payments. According to TRAI, rural internet subscriptions in India increased from 308 million in 2020 to over 375 million in 2023, indicating a steady rise in rural digital participation (Telecom Regulatory Authority of India, 2023). Assam reflects this trend with more than 1.2 crore internet subscribers as of 2023 (TRAI, 2023). These numbers show a clear readiness for structured digital interventions, making the ICT village concept both timely and relevant.

Opportunities and Prospects

Adopting an ICT village in Assam offers meaningful opportunities for improving service delivery, enhancing livelihood prospects and reducing the structural disadvantages associated with rural living.

One of the most significant benefits is better access to government services. Villagers often travel long distances to district or block offices for documents such as income certificates, land records or pension applications. A digitally enabled village centre with a trained local operator can make these services available locally. This reduces travel burdens and strengthens villagers' trust in public systems. Assam's Panchayat & Rural Development digital services already allow online access to documents like land pattas, certificates and welfare scheme registrations, which can be directly integrated into ICT village kiosks (Panchayat & Rural Development, Government of Assam, n.d.).

The agricultural sector stands to benefit immensely. Farmers in Assam often rely on middlemen for market information, leading to low price realisation. ICT tools can provide real-time mandi prices, weather forecasts and pest advisory messages, helping farmers make informed decisions. A study found that farmers using Common Service Centres in parts of Assam

gained better access to crop advisory, digital payments and government agricultural schemes. Improved market information has been shown to increase price realisation by 5–12 percent for small farmers, as documented in Digital India programme evaluations (Rajeev, 2022).

Healthcare is another vital area. Telemedicine can provide villagers with remote consultations, diagnostic advice and follow-up care. During the pandemic Assam's early digital village projects facilitated telemedicine as a core service. A report in The Times of India noted that by late 2020, 33 digital villages in Assam had been equipped to deliver computer education and online medical and veterinary consultations to approximately 15,000 rural beneficiaries (Times of India, 2020). This shows that ICT-based health access is not only feasible but valued.

In the field of education, ICT villages can support blended learning for school children and skill development programmes for youths. Digital literacy courses, basic computer training and online career counselling can significantly improve the prospects of rural youth. Digital learning labs set up under Assam's ICT programmes have already shown increased student engagement, especially in upper primary classes.

ICT villages also open the door to small-scale entrepreneurship. Local operators can earn income through printing, form-filling, telemedicine facilitation, training and digital marketplace support. Villagers skilled in digital tools can offer phone repair services, digital payments assistance or content translation. For women, in particular, the ability to engage in digital livelihoods from within the village increases autonomy and participation in the local economy.

Challenges on the Ground

Despite high potential, implementing an ICT village depends on addressing several practical, technical and social challenges.

Connectivity remains uneven in remote char areas, hill districts and forest-adjacent regions. Even though fibre connectivity under BharatNet has reached many panchayats, last-mile connectivity to the actual village is still inconsistent. Power cuts further disrupt digital service delivery. Hybrid models combining fibre, mobile networks and solar backup are essential for reliability.

Digital literacy gaps remain a major barrier. Many villagers, especially elderly people and women, may feel hesitant to use online systems for payments or applications. Creating trust requires patient, localised training in Assamese or tribal languages, delivered through demonstration rather than instruction alone.

Affordability is another concern. While UPI payments and basic services are free, value-added services often charge nominal fees. For low-income households these costs may still act as barriers. Subsidy models for essential services and transparent fee structures help ensure equitable access.

Local governance challenges also arise. Without accountability mechanisms, kiosk operators may prioritise profit over service or create informal charges. Clear operating guidelines, digital receipts and grievance options are critical for fairness.

Content relevance is often overlooked. Digital tools designed for other states may not recognise Assam's unique contexts such as tea garden labour systems, flood cycles, fishery practices or the requirements of tribal communities. Co-design with local groups is necessary to make ICT meaningful rather than generic.

Sustainability of ICT villages is another long-term challenge. Pilot projects may thrive under initial funding but struggle later. Financial sustainability requires a mix of government incentives, user-based revenues and local entrepreneurship.

Case Insight from Assam's Digital Village Rollout

Assam's experience under the early phase of the Digital Village initiative shows both promise and caution. As reported by The Times of India (2020), 33 villages across several districts were equipped with digital centres, enabling villagers to access telemedicine, online veterinary care and basic computer education. Approximately 15,000 villagers participated in these services within the initial phases. This revealed two important insights. First, villagers quickly adopted services that met immediate needs, such as healthcare and training. Second, the uneven uptake across districts highlighted gaps in connectivity, staffing and awareness campaigns.

A separate study on Common Service Centres noted that stable connectivity, operator training and local relevance of content were the strongest predictors of success in Assam's digital delivery ecosystem. These findings align closely with the ICT village concept and highlight the need for local ownership and reliable infrastructure. (Rajeev, 2022).

Conclusion

An ICT village for rural Assam is more than a technological effort; it is a community

transformation model. If implemented with sensitivity to local realities, it can bring public services closer to people, empower farmers with timely information, provide healthcare access where doctors are few, enable youth to learn new skills and create digital livelihoods within the village itself. Assam's early digital village experience shows that the idea is workable and impactful, yet long-term success will depend on connectivity reliability, digital literacy, governance transparency and local capacity-building. With thoughtful planning, partnerships across government, private sector and local communities and a commitment to language-appropriate, inclusive design, ICT villages can enable Assam's rural population to participate fully and confidently in the digital economy.

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