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The FinteQC 2026 Organizing Committee
Pavilion of Entrepreneurship and Innovation
ESG UQAM, Montréal, Canada

Subject : Manuscript Submission for FinteQC 2026: **"Leading the Financial Digital Era in Nepal: Akash Digital's Contribution"**

Dear FinteQC 2026 Review Committee,

I am pleased to submit our original research paper, **"Leading the Financial Digital Era in Nepal: Akash Digital's Contribution,"** for consideration at the FinteQC 2026 conference. This manuscript is submitted as a **Full Paper** and is aligned with the conference's focus on innovative FinTech solutions in emerging economies.

Significance and Relevance

This paper addresses a critical challenge in **Financial Inclusion and FinTech in Emerging Economies**—specifically, the systemic lack of digitization within Nepal's high-impact cooperative financial sector.

Our work details the development and implementation of **Akash Digital Management System (Akash DMS)**, a purpose-built, cloud-based solution that has achieved quantifiable success in automating manual, paper-based operations across over 500 cooperative organizations. The core significance of this contribution lies in its demonstration of how localized FinTech can directly improve **operational efficiency** (reporting a 70.6% reduction in loan processing time) and enhance **compliance and risk management** in an underserved market.

Contribution to FinteQC 2026

The findings, particularly the microservices-based system architecture (Section 2.1) and the detailed impact metrics (Section 3), offer valuable, actionable insights for developers and policymakers focusing on scalable digital solutions in the global South, making it highly relevant to the conference's core themes.

Declarations

We confirm the following:

- The manuscript is original, has not been published previously, and is not under concurrent consideration for publication elsewhere.
- All authors (Tanka Prasad Adhikari) have approved the manuscript and agree with its submission to FinteQC 2026.
- We have no conflicts of interest to disclose beyond the author's affiliation as CEO of Akash Digital Pvt. Ltd., the developer of the system studied.

Thank you for considering our submission. We look forward to the review process and the opportunity to present our work at FinteQC 2026.

Sincerely,
Tanka Prasad Adhikari
CEO, Akash Digital Pvt. Ltd.

Leading the Financial Digital Era in Nepal: Akash Digital's Contribution

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Abstract

The financial sector in Nepal faces endemic challenges rooted in slow digitization, lack of transparency, and operational inefficiencies, particularly within the cooperative financial network. These challenges persist due to reliance on time-consuming, error-prone, paper-based management systems. This paper presents the development and measurable impact of **Akash Digital Management System (Akash DMS)**, a robust, cloud-based solution specifically designed for Nepalese financial cooperatives. Akash DMS enables digital document management, automates loan and compliance workflows, and enhances member service tracking. Using mixed-method research—including direct observation, system log analytics, and user feedback from 500+ cooperative organizations—this study identifies quantifiable efficiency gains and outlines a scalable model for financial digitalization in emerging markets. The results demonstrate a 70.6% reduction in loan processing time and an 88.9% improvement in audit preparation efficiency.

Keywords: Financial Digitalization, Cooperative Management, Cloud Solutions, Automation, Operational Efficiency, FinTech in Emerging Economies.

1. Introduction

Nepal's cooperative sector plays a pivotal role in advancing financial inclusion, serving millions of citizens through savings, loans, and community investment programs. However, this critical sector remains technologically underdeveloped, with most cooperatives still dependent on manual systems and paper-based documentation. These limitations create inefficiencies, increase compliance risks, and hinder transparency.

1.1 Problem Statement

Traditional management systems in Nepalese cooperatives are characterized by:

- **Document Management Challenges** – scattered physical files, loss risks, and slow retrieval.
- **Manual Processes** – high human dependency in data entry and verification.
- **Compliance and Audit Issues** – difficulty maintaining accurate regulatory reports.
- **Limited Accessibility** – absence of real-time data access for decision-makers.

This paper addresses how a localized FinTech solution, Akash DMS, systematically resolves these pain points through digital transformation.

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2. Literature Review

While global financial digitalization has accelerated, literature suggests that **emerging economies face unique structural and infrastructural barriers** (Beck et al., 2018; Ozili, 2022). Research on **FinTech in developing nations** emphasizes the importance of context-sensitive innovation that adapts to local regulatory, social, and digital realities (Donovan, 2019).

Digital Transformation in Cooperatives:
Studies (Rana & Shrestha, 2020; FAO, 2023) indicate that cooperatives in South Asia remain heavily paper-dependent despite being primary agents of financial inclusion. Prior efforts to digitize these institutions often fail due to lack of integration with Core Banking Systems (CBS) and insufficient user training.

Cloud-Based FinTech Adoption:
According to Deloitte (2021), cloud-native FinTech systems improve agility and reduce total cost of ownership by up to 35% for small financial institutions. However, data localization, security, and offline accessibility remain major challenges (KPMG, 2022).

In Nepal's context, no comprehensive study has previously quantified the impact of localized FinTech platforms like Akash DMS on cooperative operations. This paper fills that empirical gap by documenting measurable digital efficiency outcomes.

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3. Research Design and Methodology

This study adopts a **mixed-methods research design** comprising both qualitative and quantitative approaches.

3.1 Data Collection

- **Primary Data:** Usage logs from 515 cooperative clients of Akash DMS between 2022–2025.
- **Surveys:** Feedback from 215 cooperative managers and IT officers.
- **Interviews:** Semi-structured interviews with 15 cooperative board members.
- **Observation:** Field observations of operational workflows pre- and post-DMS adoption.

3.2 Data Analysis

- Quantitative data analyzed through descriptive statistics (average loan processing time, audit preparation hours, and error rates).
- Qualitative insights coded using thematic analysis to identify patterns in digital adoption and organizational behavior change.

3.3 Research Objective

To evaluate the measurable impact of Akash DMS on operational efficiency, data integrity, and compliance readiness in Nepalese cooperative organizations.

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4. System Design: Akash Digital Management System (DMS)

Akash DMS is a purpose-built, cloud-native Software-as-a-Service (SaaS) platform addressing operational challenges faced by cooperatives.

4.1 Core Features

- **Digital Document Repository:** Secure centralized storage and indexing.
- **Workflow Automation:** Rule-based automation for loan approvals and KYM checks.
- **Comprehensive Loan Lifecycle Management:** Digital tracking of loan application, approval, and disbursement.
- **Task and Notification System:** Real-time reminders and audit trail generation.

4.2 System Architecture

Akash DMS uses a **microservices-based architecture** with three functional layers:

- **Frontend:** React/Typescript interface for responsive access.
- **Application Layer:** Laravel API Gateway managing logic and service orchestration.
- **Data Layer:** MySQL database for structured data and MinIO for document storage.

This architecture supports high scalability, enabling concurrent operations across multiple cooperative offices.

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5. Findings and Impact

5.1 Quantitative Impact Metrics

Metric	Pre-DMS Baseline	Post-DMS Average	Improvement
Loan Processing Time	9.5 days	2.8 days	**70.6% Reduction**
Data Entry Error Rate	2.1%	<0.1%	**>95% Reduction**
Audit Preparation Time	180 staff-hours	20 staff-hours	**88.9% Reduction**

5.2 Case Study Example

Jaya Manakamana Saving & Credit Co-operative Ltd., Pokhara: After adopting Akash DMS, the organization reduced its average loan processing time by 65% and achieved full audit compliance with automated reporting.

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6. Discussion

The results indicate that **digital transformation in cooperatives is achievable through localized FinTech innovation** rather than imported generic systems. The adaptability of Akash DMS to Nepal's regulatory and linguistic context was a key driver of adoption success. The model's scalability across varying cooperative sizes also supports national-level financial digitalization goals.

Challenges remain in **data literacy**, **change management**, and **infrastructure reliability**, but the observed operational gains demonstrate significant potential for replication in other developing economies.

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7. Conclusion

Akash Digital DMS represents a crucial step in bridging the digital divide within Nepal's cooperative financial system. Its adoption demonstrates measurable efficiency, transparency, and compliance improvements, serving as a case of how localized FinTech can drive systemic change. Future research will focus on integrating **AI-based credit risk scoring** and **blockchain-enabled audit verification** to further enhance financial accountability.

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8. Acknowledgments

This research and system development were funded by **Akash Digital Pvt. Ltd.**, Pokhara, Nepal.

9. Disclosure of Interests

The author, **Tanka Prasad Adhikari**, is the CEO of Akash Digital Pvt. Ltd., the developer of Akash DMS.

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