

# **Primary Research Report : Enhancing Catalog Management in ONDC Ecosystem.**

## **INTRODUCTION**

The Open Network for Digital Commerce (ONDC) is an ambitious initiative aimed at democratizing digital commerce in India. It seeks to create an open and interoperable framework that brings together buyers, sellers, and platforms. A critical component of this ecosystem is effective catalog management. However, stakeholders face numerous challenges in creating, managing, and disseminating catalogs seamlessly. This research explores these challenges, investigates the root causes, and provides actionable recommendations to optimize catalog management.

## **RESEARCH OBJECTIVES**

- Identify the pain points in catalog management faced by ONDC stakeholders.
- Analyze the existing tools and technologies used for catalog creation and distribution.
- Understand the needs of sellers and buyers regarding catalog functionalities.
- Propose scalable, efficient, and user-friendly solutions for unified catalog management.

## **RESEARCH METHODOLOGY**

### **1. Participants**

- **Buyer Applications:** Platforms facilitating transactions for consumers.
- **Seller Applications:** Tools used by sellers to list and manage their products.
- **Sellers:** Businesses ranging from small retailers to large enterprises.
- **Industry Experts:** Professionals and consultants specializing in digital commerce.

### **2. Data Collection Methods**

- **Interviews:** Conducted with 10 buyer app representatives, 15 seller app developers, and 30 sellers.

- **Surveys:** Distributed to 100 sellers and 50 application developers.
- **Focus Groups:** Organized 5 sessions with mixed stakeholder groups.
- **Field Observations:** Observed the onboarding and catalog management processes of sellers.
- **Desk Research:** Reviewed relevant reports, case studies, and technical papers on catalog management.

### 3. **Timeline and Scope**

- **Duration:** 3 weeks.
- **Geographical Scope:** Urban and rural areas near Delhi NCR, including Greater Noida, covering both urban and rural regions.

# **FINDINGS**

## **A. Challenges Identified.**

### **1. Buyer Applications**

- **Inconsistent Product Representation:** 85% reported difficulties in standardizing product displays across diverse suppliers.
- **Integration Complexities:** 72% faced challenges integrating supplier catalogs due to varied formats and taxonomies.

### **2. Seller Applications**

- **Data Duplication:** 68% highlighted redundant catalog entries as a significant problem.
- **Fragmentation:** The absence of a central reference catalog led to inconsistencies in product attributes.

### **3. Sellers**

- **Onboarding Difficulties:** 70% of sellers, particularly small retailers, found catalog creation overwhelming.
- **Dynamic Attributes Management:** 65% struggled with real-time updates for stock, pricing, and availability.

## **B. Trends Observed**

- **Growing Demand for AI-Driven Solutions:** Stakeholders showed interest in AI-powered tools for automating catalog creation and organization.
- **Regional Language Support:** High demand for tools supporting multiple languages to cater to diverse sellers.
- **Decentralized Catalog Models:** Emerging preference for federated hosting to reduce redundancy and improve scalability.

# **PROPOSED SOLUTIONS**

## **1. Centralized Catalog Management Platform**

### **Features:**

- Predefined templates for specific domains.
- AI-driven tools for automating catalog creation.
- Real-time synchronization for dynamic attributes.
- Multilingual and mobile-friendly interfaces.

## **2. Federated Hosting Model**

### **Features:**

- Decentralized storage to minimize redundancy.
- Hash-based deduplication mechanisms.
- Localized catalog caching for faster access.

## **3. Open-Source Tools**

### **Features:**

- APIs for seamless integration.
- Customizable catalog templates.
- Community-driven updates and support.

## **4. Dynamic Attribute Management**

### **Features:**

- Automated real-time updates.
- Integration with inventory and order management systems.
- Clear differentiation between static and dynamic product attributes

# **CASE STUDIES**

## **Case Study 1: Small Retailer Onboarding**

- **Background:** A rural Kirana store owner struggled with creating a digital catalog.
- **Intervention:** Provided a predefined grocery catalog template and multilingual support.
- **Outcome:** Reduced catalog creation time by 60% and improved inventory visibility.

## **Case Study 2: Buyer App Integration**

- **Background:** A buyer app faced inconsistencies in displaying supplier data.
- **Intervention:** Integrated a centralized catalog repository.
- **Outcome:** Improved user experience by ensuring consistent product representation.

## **Case Study 3: AI-Powered Deduplication**

- **Background:** A seller app experienced a 30% duplication rate in catalog entries.
- **Intervention:** Deployed an AI-driven deduplication system.
- **Outcome:** Reduced redundancy by 50% within three weeks.

## **RECOMMENDATIONS**

- Establish a centralized catalog repository for efficient data management.
- Promote the adoption of federated hosting systems to address scalability issues.
- Invest in AI-driven tools for automated catalog creation and deduplication.
- Provide regional language support to ensure inclusivity.
- Pilot proposed solutions in select regions before scaling nationwide.
- Offer training programs for sellers to enhance digital literacy.
- Implement voice-based tools and interactive interfaces to cater to digitally novice users.
- Introduce periodic audits to ensure data consistency and catalog integrity.
- Develop a seller feedback loop for continuous improvement of tools.
- Create incentives for early adopters of proposed catalog management systems.

# **APPENDICES**

## **A. Survey Questions with Responses**

### **1.What are your primary challenges in managing catalogs?**

- "Fragmented formats create confusion for users." (Buyer Application)
- "High costs for storage and migration." (Seller Application)
- "The process is too technical." (Seller)

### **2. How satisfied are you with current catalog tools?**

- "They work but lack flexibility and advanced features." (Seller)
- "Integration with existing systems is cumbersome." (Seller Application)

### **3.What features would you like in a unified catalog platform?**

- "AI-driven recommendations for product descriptions." (Seller)
- "Real-time stock synchronization." (Buyer Application)

### **4.How often do you update catalog information?**

- "Every week for most products, daily for fast-moving items." (Seller)

### **5.Are you open to using AI-driven solutions for catalog management?**

- "Yes, if they are cost-effective and easy to use." (Seller)
- "Only if they integrate seamlessly with existing tools." (Seller Application)



**B. DATA TABLES**

STAKEHOLDER	SAMPLE SIZE	KEY CHALLENGE	PROPOSED SOLUTION
BUYER APPLICATIONS	10	INCONSISTENT REPRESENTATION	CENTRALIZED REPOSITORY
SELLER APPLICATIONS	15	DATA DUPLICATION	HASHING MECHANISMS
SELLER	30	ONBOARDING COMPLEXITY	PREDEFINED TEMPLATES

**C.REFERENCES**

- ONDC Technical Whitepaper (2023).
- Field Interviews and Focus Groups (2024).
- Reports on AI in E-commerce (2022).
- Case Studies on Catalog Management Tools (2023).