



Challenges Faced By Indian MSME's To Go Digitally Global And Solutions.

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Abstract: Indian Micro, Small, and Medium Enterprises (MSMEs) are vital to the nation's economy, significantly contributing to GDP, exports, and employment. While globalization and digital transformation present opportunities for these enterprises to expand internationally, numerous challenges hinder their progress. This paper explores these obstacles, including lack of digital infrastructure, technological illiteracy, financial constraints, regulatory complexities, logistical inefficiencies, and difficulties in building trust in foreign markets. The paper presents a multi-faceted approach to address these challenges, encompassing policy reforms, capacity building initiatives, technological advancements, and financial support. It also studies the use of blockchain for secure transactions using Escrow Payment System, Artificial Intelligence for personalized customer engagement, and fintech solutions for seamless cross-border payments. By identifying key policy recommendations, technological interventions, and best practices, this study aims to contribute to the sustainable digital globalization of Indian MSMEs, ensuring their competitiveness in the ever-evolving global economy.

Keywords- MSME's, Exports, Logistics, Blockchain, Escrow Payment System

I. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) provide the backbone to India's economy, contributing 30% to GDP, 48% to exports, and over 110 million jobs. With globalization and digital transformation reshaping business landscapes, Indian MSMEs have a tremendous opportunity to expand their reach beyond domestic borders and establish a strong digital presence in global markets. The rise of digital payment systems, fintech innovations, and e-commerce platforms has created an ideal ecosystem for small businesses to access international consumers without requiring significant physical infrastructure. However, despite this potential, a vast majority of Indian MSMEs struggle to adopt digital tools and build a competitive global presence. One of the primary challenges is digital infrastructure. Many MSMEs, particularly those in rural and semi-urban areas, lack access to high-speed internet, cloud computing facilities, and robust cybersecurity measures. This digital divide prevents them from leveraging online marketplaces, digital payment systems, and automation tools that are crucial for international trade. Moreover, technological illiteracy remains a major hurdle, as a significant number of MSME owners and employees lack the digital skills needed to adopt and optimize e-commerce platforms, data analytics, and AI-driven customer engagement tools. Beyond technological barriers, financial constraints pose another significant challenge. Unlike large enterprises with dedicated budgets for digital expansion, MSMEs often struggle to secure funding for digital adoption. High transaction costs, foreign exchange volatility, and complex international payment systems further discourage small businesses from entering global

markets. Even when financial assistance is available through government initiatives like MUDRA loans and the Digital MSME scheme, bureaucratic red tape and lack of awareness prevent many businesses from accessing these benefits. Regulatory and compliance issues add another layer of complexity to cross-border digital trade. Each country has its own data protection laws, taxation policies, and e-commerce regulations, making it difficult for Indian MSMEs to seamlessly sell their products and services worldwide. While platforms like Amazon, Alibaba, and eBay provide access to international markets, stringent quality standards, return policies, and logistical challenges create additional burdens. Inefficiencies in logistics such as high shipping costs, customs delays, and supply chain disruptions further limit MSMEs' ability to efficiently fulfill international orders. Another major challenge is building trust and credibility in foreign markets. Many Indian MSMEs struggle to establish a strong brand reputation globally due to limited access to digital marketing tools, language barriers, and cultural differences. Without a solid online presence, verified customer reviews, and effective digital marketing strategies, many businesses fail to gain traction internationally.

To overcome these challenges, Indian MSMEs need a multi-faceted approach that includes policy reforms, capacity-building initiatives, technological advancements, and financial support. Collaboration between government bodies and private stakeholders is crucial to improving digital literacy, enhancing internet accessibility, and simplifying regulatory frameworks. Adopting emerging technologies such as blockchain for secure transactions, AI for personalized customer engagement, and fintech solutions for seamless cross-border payments can further empower MSMEs to establish a strong digital global presence. This research paper explores the various obstacles preventing Indian MSMEs from achieving a robust international digital footprint and proposes strategic solutions to bridge these gaps. By identifying key policy recommendations, technological interventions, and best practices, this study aims to contribute to the sustainable digital globalization of Indian MSMEs, ensuring their competitiveness in the ever-evolving global economy.

II. CHALLENGES FACED BY MSMEs

1. Lack of Awareness and Skills

Many MSMEs lack the necessary knowledge and skills to effectively utilize digital tools. This deficiency limits their ability to leverage digital platforms for global outreach and operational efficiency. According to research, over 70% of Indian MSME owners report insufficient understanding of digital marketing strategies and e-commerce operations. Effective digital marketing strategies for MSMEs include search engine optimization (SEO), social media marketing, content marketing, and email marketing. E-commerce operations that could benefit MSMEs encompass online storefront management, payment gateway integration, and customer relationship management (CRM) systems. Training programs can be tailored to address this knowledge gap by focusing on these areas, providing hands-on workshops, and offering continuous support through online resources and mentorship programs.

2. Financial Constraints

MSMEs often operate on limited budgets, which restricts their ability to invest in technology and training. These financial constraints also impede their capacity to upgrade outdated infrastructure and adopt new digital solutions. Studies indicate that approximately 65% of MSMEs cite financial limitations as their primary barrier to digital adoption. Innovative financial models such as microfinancing, crowdfunding, and government-backed grants or subsidies can help alleviate these constraints. Implementing these models at scale involves creating accessible platforms for MSMEs to apply for financial aid, fostering partnerships with financial institutions, and ensuring transparency and efficiency in the disbursement processes.

3. *Outdated Infrastructure*

Poor access to modern technology and inadequate internet connectivity are significant barriers, particularly in semi-urban and rural areas. These infrastructural limitations hinder MSMEs from adopting digital tools and participating in the global digital economy. Only about 35% of MSMEs in India have reliable high-speed internet access needed for effective digital operations. Prioritizing infrastructure improvements in these areas requires government intervention, public-private partnerships, and investment in broadband expansion projects. Additionally, providing incentives for telecom companies to extend their services to underserved regions can help bridge the connectivity gap.

4. *Quality and Competition*

Maintaining product quality and competing with established global players is challenging for MSMEs. Intense competition in the global market requires continuous innovation and quality management, which many MSMEs struggle to achieve due to resource constraints and limited access to global best practices. Key factors enabling MSMEs to maintain product quality include adopting standardized production processes, implementing quality control measures, and investing in research and development. Successful MSMEs often follow best practices such as continuous market analysis, customer feedback integration, and strategic partnerships with industry leaders. These practices can be replicated by other MSMEs to enhance their competitiveness in the global market.

III. METHODOLOGY

We have created an Ecommerce Website for Dak Ghar Niryat Kendra that handles all the challenges mentioned above and have added a feature of Escrow payment system. Let us understand first what Escrow payment is. An escrow payment system is a financial mechanism designed to provide security and trust in transactions by involving a neutral third party to hold funds until all contractual obligations are fulfilled. This system is widely used in various industries, including e-commerce, freelancing, real estate, and high-value business deals, where ensuring fairness and preventing fraud are critical. The escrow process begins when the buyer and seller agree on specific terms, including product or service details, payment conditions, and deadlines. Once an agreement is reached, the buyer deposits the payment into a secure escrow account, ensuring that the seller is assured of the buyer's commitment while also preventing any immediate release of funds. The seller then proceeds to deliver the agreed-upon product or service, following which the buyer is given the opportunity to inspect and verify the fulfillment of the agreement. If the buyer is satisfied, they confirm the receipt of the goods or services, prompting the escrow service to release the payment to the seller. In cases where disputes arise, the escrow system provides a structured resolution process to mediate disagreements, ensuring that neither party is unfairly disadvantaged. This mechanism significantly reduces the risk of fraud for both buyers and sellers, as funds are only transferred when conditions are met, thereby eliminating scenarios where sellers fail to deliver after receiving payment or buyers refuse to pay after receiving the product or service. Additionally, escrow services often integrate compliance measures and legal protections, making them ideal for transactions involving large sums or cross-border dealings where trust is a major concern. By acting as a financial safeguard, Escrow payments enhance the credibility of transactions, streamline business operations, and provide a structured, dispute-resistant approach to financial exchanges in both online and offline marketplaces.

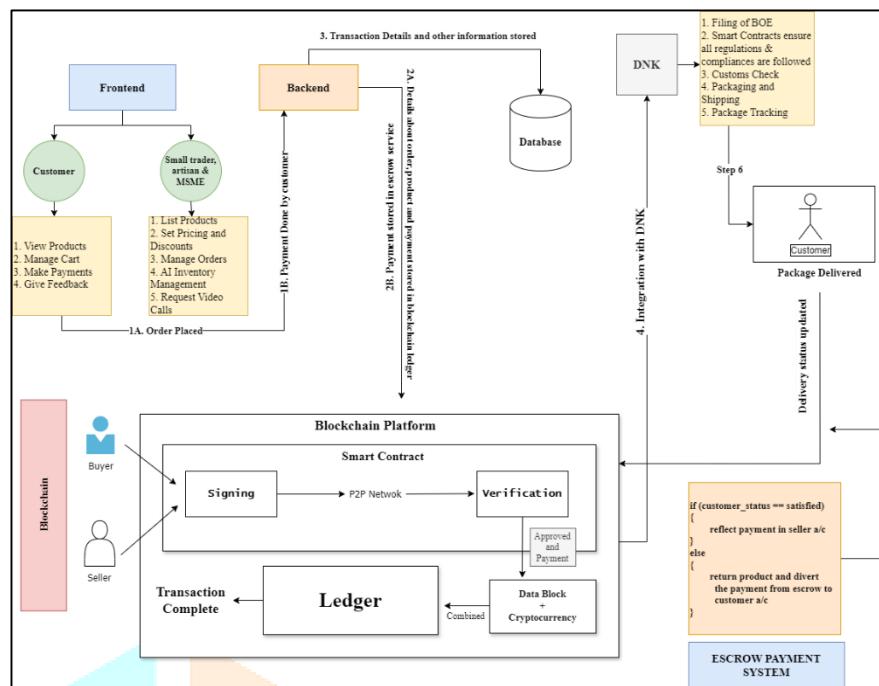


Figure 1: Flow of Application

Step 1: Customer Places an Order

- 1A: Customer browses products, manages their cart, and places an order.
- 1B: Payment is made and held in an escrow service for security.

Step 2: Seller Manages Products & Inventory

- Small traders, artisans, or MSMEs list products, set prices, and manage inventory using AI-based tools.

Step 3: Blockchain-Based Transaction Processing

- 2A: Order, payment, and escrow details are recorded on the blockchain ledger for transparency and immutability.
- 2B: A smart contract is initiated, which:
 - ~ Sign the transaction.
 - ~ Verifies it on a P2P network.
 - ~ Records it on the blockchain ledger.
- A data block with cryptocurrency is created to secure and trace the transaction.

Step 4: Integration with DNK for Export & Shipping

- DNK handles the shipping process, ensuring:
 - ~ Regulatory compliance.
 - ~ Customs clearance (filing of the Bill of Entry (BOE)).
 - ~ Package tracking.

Step 5: Order Delivery & Customer Confirmation

- **5A:** Once the package reaches the customer, the delivery status is updated.
- **5B:** Escrow system verifies if the customer is satisfied.

Step 6: Payment Release or Refund

- If the customer confirms satisfaction, the smart contract releases the payment to the seller.
- If the customer is dissatisfied, the product is returned, and payment is refunded to the customer.

IV. RESULTS AND DISCUSSION

The Dakghar Niryat Kendra project was developed using the MERN stack to provide seamless e-commerce experience with integrated authentication, payment processing, and real-time communication. The system implementation was analyzed through various key functionalities, and the outcomes are presented with supporting screenshots. The interface showcases features such as user authentication and UIDAI verification, ensuring secure onboarding through government-approved identity validation. The product listings and checkout process demonstrate a streamlined purchase experience, allowing users to browse, select, and complete transactions efficiently. Additionally, the real-time chat and order tracking system, implemented using socket.io, enables instant communication between buyers and sellers, enhancing user engagement. The project also incorporates Stripe payment gateway, ensuring secure and efficient financial transactions. The system was evaluated based on usability, responsiveness, and transaction security, with screenshots illustrating seamless navigation across different modules, efficient authentication and payment processing, and the impact of real-time chat on user experience. Further evaluation highlights the system's scalability, security measures, and user feedback, providing a comprehensive assessment of its overall functionality and effectiveness.

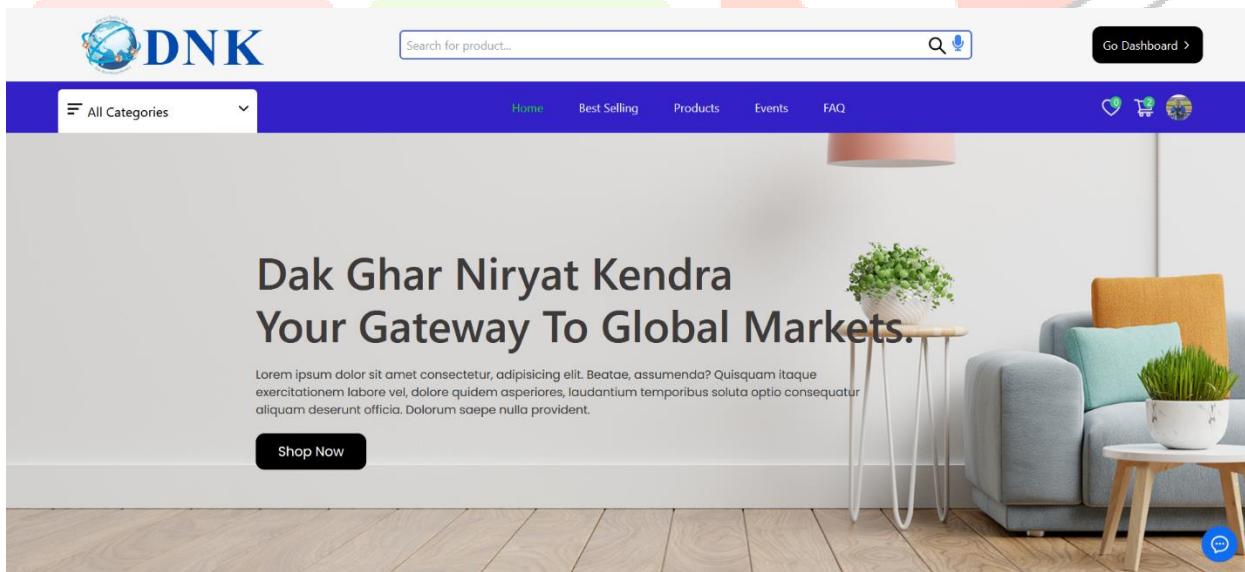
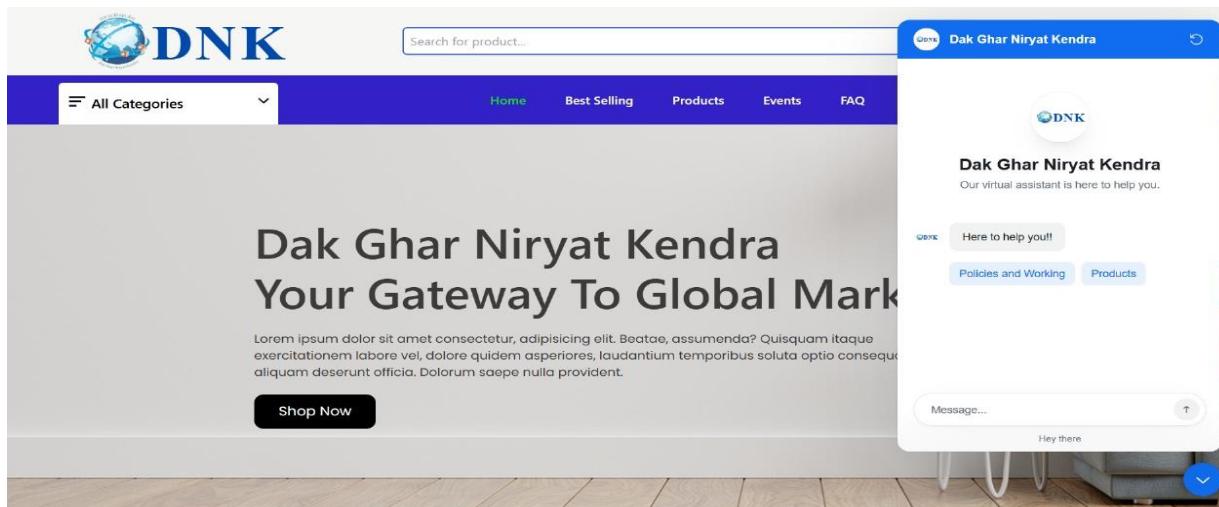


Figure 2: Home Page

This is the landing page of the Dak Ghar Niryat Kendra (DNK) project, which serves as a gateway for users to explore global markets. The page features a clean and modern design with a navigation bar that includes categories like Home, Best Selling, Products, Events, and FAQ. A search bar allows users to look for specific products, and a "Go Dashboard" button provides access to user-specific functionalities. The hero section prominently displays the DNK slogan, along with a placeholder text description and a "Shop Now" button, likely leading to the marketplace. The interface also includes shopping cart and location icons, a weather widget at the bottom, and a customer support chat option.



This is the **Chat Bot** virtual assistant designed to help users navigate the platform. It provides quick assistance with predefined options such as "Here to help you!!", "Policies and Working", and "Products". Users can also type their queries in the message input field at the bottom. The chatbot likely enhances user experience by providing instant support, answering FAQs, and guiding users through the platform's features.

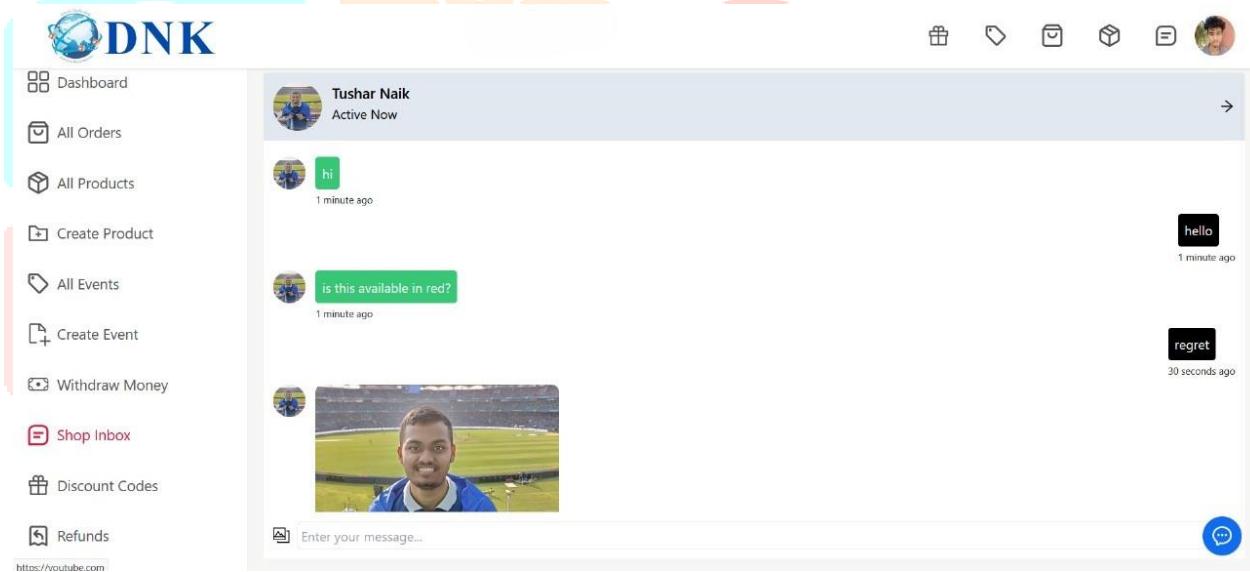


Figure 4: Chat Box

The Chat Inbox page of the Dakghar Niryat Kendra platform serves as a real-time messaging interface, enabling seamless communication between buyers and sellers. The interface includes a left sidebar navigation menu with options such as Dashboard, Orders, Products, Events, Withdraw Money, Shop Inbox, Discount Codes, and Refunds, suggesting that this is part of the seller's dashboard. The main chat window displays conversations, allowing users to exchange both text messages and images, enhancing interaction.

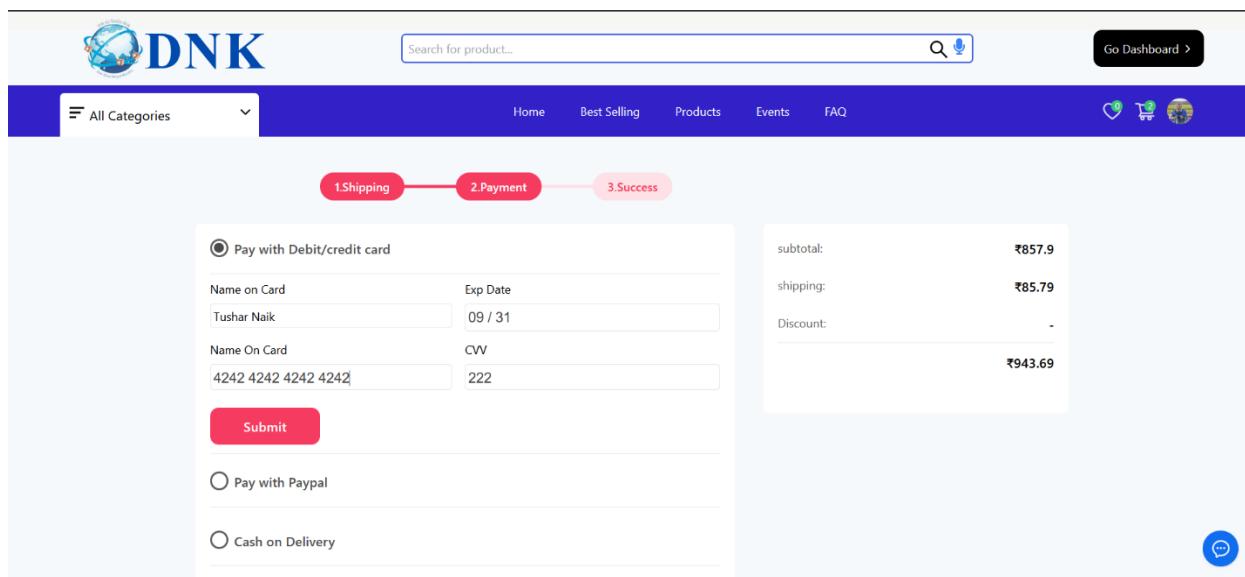


Figure 5: Payment Interface

Escrow payment system was not feasible for us to implement so we had used stripe payment system to mimic the system. The Payment Page of the Dakghar Niryat Kendra platform facilitates secure and seamless transactions for users. The interface follows a three-step checkout process, including Shipping, Payment, and Success, ensuring a structured purchasing experience. Users can choose from multiple payment methods, including Debit/Credit Card, PayPal, and Cash on Delivery. The form for card payments requires essential details such as the cardholder's name, card number, expiration date, and CVV, ensuring secure transactions. The right panel provides a summary of the order, displaying the subtotal, shipping charges, and applicable discounts, giving users a transparent breakdown of their expenses. The navigation bar at the top allows users to search for products and access different sections like Home, Best Selling, Products, Events, and FAQ, enhancing accessibility. The "Submit" button finalizes the payment process, and the UI ensures a user-friendly and intuitive experience. Integrated with Stripe, this payment system ensures reliability, security, and efficiency, making it a crucial component of the DNK platform's e-commerce functionality.

V. CONCLUSION

Indian MSMEs face several challenges in going digitally global, including lack of awareness and skills, financial constraints, outdated infrastructure, and intense competition. However, solutions such as digital tools integration, tailored training programs, financial innovations, and collaborative platforms can help overcome these hurdles. Digital tools like e-commerce platforms, digital payment systems, and cloud computing services have proven to be effective for MSMEs. Tailored training programs enhance digital skills among employees, leading to measurable improvements in business performance, including increased efficiency and market reach. Financial innovations such as microfinancing, digital lending platforms, and government grants help MSMEs manage monetary constraints. Collaborative platforms enable MSMEs to share resources, knowledge, and market access, enhancing their competitiveness in the global market. Examples of successful collaborative platforms include industry-specific consortiums and digital marketplaces. Government policies and initiatives, such as the Digital India campaign and MSME-focused subsidies, have been instrumental in aiding the digital transformation of Indian MSMEs. These policies have led to increased digital adoption and improved market expansion. By addressing these challenges and leveraging available solutions, Indian MSMEs can successfully navigate the digital landscape and achieve global outreach. The digital transformation of MSMEs is not just an opportunity but a necessity for survival and growth in today's interconnected global economy. With the right support systems and strategic approaches, Indian MSMEs can transform challenges into steppingstones for global success.

VI. REFERENCES

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