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**Your Bridge**

**to**

**Digital Banking**

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1. Introduction

The Indian banking sector is undergoing a major transformation as digital disruptions reshape how financial services are delivered and consumed. With the increasing adoption of digital technologies, the opportunities and challenges presented to the Indian banking industry have become more apparent than ever before. As innovative digital solutions are challenging traditional banking practices, it is crucial to explore the opportunities and challenges this disruption brings to the Indian banking landscape and discuss the strategies to overcome them.

Banking has undergone a significant transformation over the last decade.

* **Bank Account Penetration** has gone from 53% in 2014 to 80% now, and financial inclusion covers both mass & affluent banking customers.
* In 2014, there was one commercial bank branch for 36,000 citizens, which increased to one for every 9,000. This means a broader reach and last-mile delivery of products and services.
* **The per capita deposit-to-income ratio** has gone from 45 to 71 because of digital journeys, mobile, and WhatsApp banking.
* Due to digital identity, credit bureaus, and banking data advancements, the per capita credit-to-income ratio has also increased from 27 to 51.
* **The number of UPI transactions** for the year has gone from 20 billion in a year in 2020 to 14 billion in a month in 2024. Digital wallets and payment bank ecosystem is flourishing in India
* **With 24\*7 online banking,** the convenience of having banking products & services at your fingertips vs going to a branch.
* Growing investor and societal demands for **sustainable finance** are a strategic focus.
1. Top Priorities for Banks

Changes in the macroeconomic environment, competition, regulatory mandates, sustainability concerns, and the difficulties of attracting and retaining talent are all shaping the priorities for the banks.

* **Customer Experience**: Omnichannel Banking for seamless and consistent banking experience, availability of services & faster response time to drive customer loyalty.
* **Digital Transformation**: Indian banks' investments in digital transformation are projected to grow at a CAGR of 20% over the next five years. Significant areas of improvement are CBS, Customer Experience, Cybersecurity, Data analytics, and fintech partnerships.
* **Operational Efficiency**: RPA to streamline repetitive tasks and reduce operational costs. Estimates suggest that RPA can reduce operational costs by 30-50% by automating routine tasks. Around 80% of top Indian banks have invested in RPA in their operations.
* **Modern Core Banking Solutions**: Modernizing core banking systems allows real-time processing, better data management, and improved service delivery.
* **Robust Business Processes**: Strategic investments for improvements in overall business processes, which include KYC, Onboarding & Origination, Loan processing, Collections, servicing, and more. The country’s leading private bank uses AI for predictive analytics in loan approvals, reducing processing time by 50% and increasing approval rates by 30%.
* **The Banking Super App**: Banks are investing heavily in digital payment systems, and over 100 million users are adopting various digital payment methods. Banks should emphasize innovative designs and personalized customer journeys as digital transactions grow.
* **Modern & Modular Architecture**: 60% of banks in India need help to offer intuitive, relevant, and personalized content via their digital channels. Banks should be agile to the evolving landscape and able to integrate with third-party functionalities.
* **Human Capital Development**: Reskilling and Upskilling, Investment in training programs to ensure staff is equipped with the latest skills, particularly in technology and customer service.
* **Regulatory Compliance**: RegTech solutions to streamline compliance processes and reporting. Data privacy and protection, robust data governance practices to comply with the regulations
* **Risk Management**: Using AI and predictive analytics for better risk assessment and management. Conduct regular scenario planning and stress testing to prepare for potential downturns.

\*Source: IDC | Analyze the Future and KPMG research

1. Catalysts

Indian policymakers have conceptualized financial inclusion as a three-part strategy based on digital technologies: JAM, which stands for Jan Dhan (Banking), Aadhar (biometric identity), and Mobile (transactions). This strategy has reduced corruption in welfare programs, economized expenditures, and positively impacted outcomes. The JAM framework for policy innovation is a catalyst for digital banking progress and growth.

* **Aadhar** – unique identity: Aadhaar-enabled DBT, AEPS, JAM Trinity, Aadhaar-linked ration cards-ONORC scheme, and Aadhaar-based biometric authentication. As of June 22, 134 Cr Aadhaars have been generated.
* **Pradhan Mantri Jan Dhan Yojna**: 51.95 Cr beneficiaries banked; ₹234,996.52 Cr. Deposits in beneficiary accounts as of March 2024
* **IDRBT**: The Institute for Development & Research in Banking is focused exclusively on the niche area of Banking Technology and was established by RBI in 1996
* NEFT – Transaction time 15 mins to 2 hrs., no min and max limit
* IMPS – Available 24/7, Instant transfer, Limit: Rs 1 to 5 Lakhs per transaction
* RTGS – Available 24/7, within 30 mins of the fund transfer, Limit: Rs 2 lakhs to no limit
* UPI – Real-time transactions
* BBPS - Making bill payments a round-the-clock option
* **Credit Bureaus**: TransUnion CIBIL shows 179 million credit-served consumers in India, and 164 million are still credit-served at the end of 2021. Help with credit assessment, risk management & fraud detection and help banks expand their credit portfolios. The four that operate in India are CIBIL, Experian, Equifax, and CRIF High Mark.
* **India Stack** ensures financial inclusion by streamlining identity verification with Aadhaar, diminishing paperwork with eKYC, and offering secure digital document storage with Digital Locker. UPI, an integral part of India Stack, has reimagined payments and rendered them swift and hassle-free.
* **Digital Initiatives** to streamline & secure financial transactions:
* Centralized Online Security Registry for prevention of frauds
* Paperless e-KYC/ Video-based KYC
* to allow paperless electronic KYC through an Aadhaar card
* e-Mandate for recurring payments
* Digital e-stamping to digitize loan documents
* **Account Aggregator** and Partner Ecosystem
* AA network: securely and digitally access and share information in the AA network.
* Partner Ecosystem: This has led to increased innovation, improved customer experience, cost efficiency, and expanded market share
* Equitas SFB has opened over 10 Lakhs accounts through its partnership with Niyo.
* **Business Correspondents**
* Expand outreach and provide banking services to the unbanked and underbanked.
* Shivalik SFB has partnered with Arya.ag, a grain commerce platform, to finance small farmers against warehouse receipts.
* **Advance Tech**
* Cloud computing – offers scalability, security, and cost-efficiency
* Low-Code, No-Code– helping with the scalability of digital products quickly
* Big data analytics – facilitates insights-driven decision-making, leading to personalized services
* **Special RBI licenses**
* Licensing of 6 Payments Bank, 12 Small Finance Banks, 2 Local Area Banks
* Wider reach of formal financial services to the unbanked and underbanked, thereby promoting financial inclusion
1. Challenges

Digital disruptions in the Indian banking sector have created numerous opportunities. However, along with the opportunities, digital disruption in Indian banking also brings significant challenges that must be addressed—some visible and some nonvisible ones in the background.

The more **visible challenges** are where the bank needs more end-to-end integration/ presence of point-to-point integrations, competition with other/ more established banks, meeting regulatory requirements, integration/ adoption of fintech for innovation/ expansion, and more control on vendors in the new CBS framework.

The **invisible but high-impact challenges** are:

**Critical Concern for Data Security and Privacy**:

Cyber threats like hacking, identity theft, and phishing pose significant risks. Banks must invest in **robust cyber-security measures**, including advanced encryption techniques, multi-factor authentication, and real-time monitoring systems. Compliance with the Digital Personal Data Protection Act (DPDPA), enacted in August 2023, is crucial to protecting customer data and maintaining trust.

**Scalable and Hardened Technological Infrastructure**:

Banks need to handle increasing transaction volumes and ensure seamless integration across digital platforms. This may involve adopting **hybrid cloud** computing, modernizing core banking systems, and embracing emerging technologies such as artificial intelligence (AI) and blockchain. Investing in scalable and secure infrastructure is essential for efficient and reliable digital banking services.

**Meeting Regulatory Compliance**:

Financial regulations designed for traditional banking may need to address the unique risks and complexities of digital banking adequately. Regulators must adapt and develop clear guidelines that balance innovation and consumer protection. Banks must remain updated on regulatory changes and **proactively ensure compliance** to avoid legal and reputational risks.

**Making Services Always Available**:

Banks must adopt security measures and data protection policies that can help build operational resilience. They must also ensure robust backup systems, disaster recovery plans, and regular testing. Failure to adapt to evolving customer needs can result in customer attrition and loss of market share.

**Navigating Regulatory and Compliance Complexity:**

The regulatory environment surrounding digital banking is complex and continuously evolving. Banks must navigate various **regulations and compliance requirements**, such as know-your-customer (KYC) norms, anti-money laundering (AML) regulations, and taxation laws. Adhering to these regulations can be challenging, especially when operating across different states or jurisdictions. Banks must allocate resources to stay abreast of regulatory changes and ensure compliance to mitigate legal and reputational risks.

**Vulnerability in Integration and Interoperability:**

Achieving **seamless integration and interoperability between different systems and platforms** can be complex, requiring standardized protocols, APIs, and secure data exchange mechanisms. Collaboration and open banking initiatives can facilitate better integration, enabling banks to offer customers a more comprehensive range of services and experiences.

**Need for Robust Risk Management Framework:**

Operational risks, cybersecurity risks, fraud risks, and technology-related risks are amplified in the digital banking landscape. Banks must implement **robust risk management frameworks**, including risk assessment, monitoring, and mitigation strategies, to safeguard against potential threats and vulnerabilities. Regular risk assessments, stress testing, and comprehensive incident response plans are essential to effective risk management.

Some others include issues with data management, nonadherence to SLAs, the presence of multiple vendors, etc.

1. Aligning Business and Technology Objectives

Aligning business objectives into a measurable and coherent set of business outcomes and necessary Key Results is, at best, an art form, if simple, exercise. Each priority focus area for the digital banking business can be organized into a set of business objectives, which can then be broken down into specific key result sets from technology implementation.

The broad portfolio of Sify services aligns with this construct of achieving
measurable outcomes at each stage of digital transformation.

**Here are some examples:**

|  |  |
| --- | --- |
| **BUSINESS OBJECTIVE / FOCUS AREAS** | **KEY RESULTS OF TECHNOLOGY IMPLEMENTATION** |
| **User Experience:** |
| Improve adoption of digital banking channels | * Increase mobile app ratings to 4.7 stars with 80% +ve reviews
* Achieve a 30% reduction in customer support tickets
* Increase digital banking transaction volumes by 25% YoY
 |
| Streamline internal business processes through automation | * Decrease average transaction process time by 25% through automation
* Implement process automation for 5 key operational workflows
* Decrease operational costs by 15% with no loss of service quality
 |
| Data-driven decision making for competitive advantage | * Use AI and Generative AI to generate personalized recommendations for 50% of customers
* Achieve 30% increase in cross selling and up selling with data driven decision making.
* Implement a data Lakehouse by streaming 80% of all data sources
 |
| Increase Availability and Performance of Business Services | * Implement observability across the technology domains and application environments
* Develop Service Graphs and AIOps dashboards for critical user journeys
 |
| Strengthen data security and compliance posture | * Implement consistent data encryption standards across on-premises, private cloud and public cloud environments.
* Achieve compliance certifications for all regulated workloads
* Achieve maximum coverage of multifactor authentication and stringent access controls
 |
| Improve scalability and agility of applications for enhanced service quality and faster time to market | * Implement automated provisioning and scaling of critical applications
* Define and implement Infrastructure as Code templates / blueprints
* Achieve maximum compliance with best practices with SHIFT+LEFT
 |

Key results like these typically require multiple technology initiatives depending on the bank's digital transformation state. The specific results highlighted above require a highly available and performant core banking system, API gateway, embedded AI/ML insight and foresight engine, and versatile data lakehouse to power a consumer-grade, modern user experience.

1. Sify Technologies: Empowering Banks for Three Decades

Sify has been a pioneer and leading transformative technology provider, enabling banks to ride every significant technology wave. Here is a summary of that journey:

ICT Pioneer

The economic reforms and liberalization over three decades ago, in 1991, paved the way for the entry of private banks and foreign banks, increased competition, investment in technology to improve operational efficiency, steady innovation in services, and expansion of the market even while focusing on reducing cost per transaction. Indian banks began adopting technologies like ATMs, core banking solutions, internet banking, and electronic payment systems. The adoption of Information and Communication Technologies (**ICT**), pioneered by Sify Technologies, continually supported this evolution from 1995 through every wave of technology transformation by the banks.

Create Network Backbone

In parallel, the establishment of the Institute for Development and Research in Banking Technology (IDRBT) in 1996 to accelerate the adoption of technology in the Indian banking sector and the resulting development of critical infrastructures like **INFINET**, SFMS, and NFS led to the creation of the IT backbone that laid the foundation for the eventual digital transformation of current times. Sify helped create the mission-critical INFINET network infrastructure and has been managing it to date. The innovation pertaining to the whole host of best-in-the-world-class real-time fund transfers and payment services like NEFT, RTGS, and IMPS rides significantly on the performance of INFINET.

Data centers and Interconnects

**Adopting Core Banking Solutions** and Internet banking brought significant changes in banking operations to a centralized database and operations from a central data center. Along with this, there was a need for seamless and reliable network connectivity between the branches and the data center to enable anywhere banking, real-time updates, and process standardization. Sify’s **ICT services** have been steadily growing in scale and reliability to provide the best-in-class colocation facilities, and data center interconnect services to every commercially operated data center (operated by whoever) to enable banks to configure policy-compliant DC/DR solutions.

Largest MPLS Network

When the Department of Posts embarked on a technology transformation journey in 2012, it had the grand ambition of eventually creating a payments bank to empower financial inclusion as part of the Prime Minister’s vision for Digital India. Sify acted as the Department of Posts (DoP) 's network integrator and network service provider. Sify built India's largest integrated MPLS (Multiprotocol Label Switching) network for postal services, connecting over 28,000 urban and semi-urban post offices. Riding on Sify’s MPLS backbone, IPPB went live with 650 branches and 3,250 access points co-located at post offices. Around 11,000 Gramin dak sevak and postmen now provide doorstep banking services through IPPB. IPPB started operations with 17 crore accounts, aiming to enable 1.55 lakh access points nationwide for banking services.

Network Managed Services

In addition to the network infrastructure, Sify provides **network management services to** enable banks to run uninterrupted branch networks and internet banking services to run their anytime, anywhere banking services. India's largest public sector bank relies on Sify to manage its network and host a significant share of its private cloud environment.

Cloud Adjacency

Cloud-based internet and mobile applications also need secure, low-latency access to the core banking applications. Sify’s cloud adjacency with all major cloud providers and MetroX-connect for overflow workloads offers an excellent option for configuring efficient and **cost-effective hybrid cloud architectures.**

CloudInfinit Multicloud Management Platform

With the advent of significant cloud adoption by banks for their consumer-facing applications like Internet banking and mobile banking, and with multiple large cloud providers competing to offer best-of-breed services to banks, each bank is invariably deploying different applications across different clouds. This leads to the problem of shifting the baseline of cost significantly upwards. It is pushing the banks to search for new capabilities to deliver newer value to customers and, in turn, better monetize their cloud infrastructure. The 5th generation **cloudinfinit multi-cloud management** platform by Sify provides significant value to customers, provides visibility to cloud consumption by the banks, and enables control of the consumption sprawl.

Full Stack Observability

In the digital age, **fleeting customer loyalty to payment systems** (UPI)and the push to comply with RBI regulations to keep the failure rate under prescribed limits significantly strain the banking infrastructure. This is significantly compounded by the fact that there are many third-party services that banks have to use in a user's journey to complete a payment transaction. Even a few minutes of downtime contribute to a massive loss of hard revenues and irreparable loss of credibility. Banks look for **near real-time determination of root cause** for which the Sify InfinitFSO platform helps establish AIOps-enabled root cause determination across domains such as networks, applications, and databases as network, application, and database.

Secure Access Service Edge

While cloud-based internet applications were constantly exposed to various security threats, Work from anywhere has now become a fact of life, and with that comes the need to reimagine the security of accessing the core banking applications. The new class of integrated cloud access security and zero trust network service, referred to as **Secure Access Service Edge (SASE)** from Sify, addresses this requirement.

Branch in a Box

Banks are **building ecosystems** with financial services and Fintech companies and deploying data platforms to leverage AI/ML to accelerate business growth and sustain superior-quality customer service. Rapid branch expansion is required to enable the resulting field operations. Sify offers **“Branch In a Box”** – a comprehensive, self-contained solution that provides essential tools and resources for quickly and efficiently establishing functional office space. This includes WAN, LAN, and security solutions in one standardized design, which can easily be replicated per the business's core objectives.

Scalable Infrastructure

This is again leading to a significant expansion of the infrastructure to power digital technologies, forcing the banks to look for the extensive infrastructure to start with, the ability to scale massively, and the need for **Availability Zones**. Sify’s comprehensive coverage of all major metros of India with DC and Network offers best-in-class options.

Digital Asset Management

Finally, to capture market share and engage with current and future customers, digital marketing teams must manage the digital asset lifecycle, activate digital assets across different channels, and comprehensively measure the return on digital assets. Generative AI is critical for content creation and personalization for target customer profiles. Sify’s InfinitDAM and InfinitAurora platforms provide excellent features for digital asset management and Generative AI capabilities.

Auxiliary Services

In a very different category, Sify has successfully supported IBPS in conducting examinations for various public sector banks and IIBF for skill development and certification of banking and finance professionals.

1. Recalibrating to Stay Ahead of Banks' Evolving Demands

At Sify, we proactively identify our customers’ digital transformation requirements and enhance and build our Products and Services to meet those requirements. Over the last 3 decades, we have recalibrated our portfolio to suit the needs of a modern digital bank.

Here are the eight platforms from Sify, their capabilities and the direct impact they have on a modern bank

* **Network Infrastructure Services**
	+ Reliable and resilient WAN services
	+ Comprehensive design for future growth
	+ Regulatory compliant network services
	+ Seamless network services across banking business channels

Banking Services anytime, anywhere, through multiple channels such as web mobile and branch locations

* **Network Digital Managed Services**
	+ The complete spectrum of network operations – SLA, vendor, AMC management and NOC
	+ Solve for redundancy, security, flexibility, performance and operations management

Uninterrupted access to banking services, improved security posture and cost efficiency

* **Data Center and Colo Services**
	+ 12 Data Centers, 190+ MW IT power, expanding to 350+ MW and 75000+ racks by 2025
	+ AI/ ML led operational excellence with 99.999% uptime
	+ Hyperconnected, carrier neutral and rich interconnect ecosystem

1. High availability and reliability for critical banking operations

2. Redundancy to minimizing the risk of downtime due to local outages or disasters

* **Cloud & IT Managed Services**
	+ Hybrid infrastructure design aligned to the banks’ growth plans/ needs
	+ Robust and scalable infrastructure for agile business
	+ Advanced platform to enhance operational efficiency
	+ Future proof infrastructure for regulatory and business needs
	+ High performance & resilient branch connectivity service model aligned for future branch expansion
	+ Insight driven service report

Accommodate changes in customer demand as well as introduce & scale pay-as-you-use models for non-core applications

* **Cloud Infinit Enterprise & Cloud Infrastructure**
	+ Proven private cloud and orchestration layer for cloud management

Data privacy for critical applications and minimum budget variance

* **Cyber Security Management**
	+ Digital eco-systems resilience against cyber threats
	+ Robust security architecture across IT landscape
	+ Nextgen Security Operations Center
	+ Policy aligned security services

Protection of sensitive data

Compliance with regulations - GDPR etc

Prevention of financial fraud

Maintaining customer trust

* **Digital Application Managed Services**
	+ Automation of DevSecOps with AI based platforms
	+ Observability as a service for proactive resolution of issues/ threats
	+ Tool & automation led service management

Continuous innovation; continuous development

Data Insights

Enhanced customer experience

* **Industry Application Managed Services**
	+ Implementation & migration capabilities on business applications – Oracle, MS and SAP
	+ Continuous improvements & transformation

Collaboration, modern workplace and sustainability

1. Conclusion

In conclusion, the Indian banking sector's ongoing digital transformation presents both significant opportunities and formidable challenges. Banks are prioritizing customer experience, digital transformation, operational efficiency, modern core banking solutions, robust business processes, and human capital development.

Sify Technologies has been a crucial partner for over three decades, helping banks navigate these changes with innovative ICT solutions. As banks continue to align their business and technology objectives, the partnership with Sify ensures they remain agile, resilient, and competitive in the evolving digital landscape. Continual innovation and strategic collaboration will be key to meeting the demands of the future and driving sustained growth in the banking sector.

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