BFSI INDUSTRY

Data Center and Cloud Battle Card
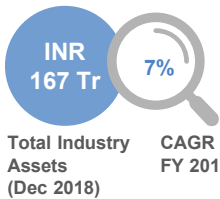
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BFSI – DC and Cloud Battle Card

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Industry Overview

At 52%, India has the second-highest fintech adoption rate in the APAC region. By 2022, **15–20%** of the Indian workforce in the BFSI sector will be deployed in jobs that do not exist today

Banking

INR 167 Tr
Total Industry Assets (Dec 2018)

7%
CAGR FY 2013–2018

Mutual Fund

INR 24 Tr
Assets Under Management (Apr–Nov 2018)

Insurance

INR 19.8 Tr
Projected Market Size (2020)

12%

FINTECH

India's fintech market is expected to grow to **INR 170.4 Bn** by **2020** from **INR 85.2 Bn** in 2016

80% of banks in India and the **APAC** region **migrated** to a **hybrid cloud** architecture in **2018**

The public cloud services market in India reached **INR 127.8 Bn in 2017**, up from **INR 92.3 Bn in 2016**
It is expected to reach **INR 284 Bn by 2020**

The Indian BFSI players spent ~**8%*** of their **Information and Communications Technology (ICT) budget** on **Cloud** and **Data Center** (DC) Services (2018)   * Ballpark estimation based on primary inputs

The **Indian BFSI** industry is **adopting** top technological trends, such as **cloud** and **artificial intelligence (AI)** to become **agile**, and **enhance branch banking** and **customer experience**

Industry Drivers

India's **BFSI cloud market** is primarily driven by factors such as **technological innovations**, increasing adoption of **digital payment** systems, and favorable **government policies**

Growing RoI from Fintech Projects
- At 29%, India offers the highest expected RoI on fintech projects compared with the global average of 20% (PwC 2017)

Digital Payments and Mobile Banking
- Digital payment transactions in India will grow to INR 35.5 Tr by 2020, from INR 3.5 Tr in 2016
- The volume of mobile banking services grew by 92% in 2017–2018

Increasingly Sophisticated and Diverse Offerings
- India represents opportunities worth INR 142 Tr for cloud computing services
- Banks are using services from multiple cloud and DC providers to reduce cost, increase efficiency, and provide compelling customer experience

Protection Against Financial Crimes
- Scalable cloud solutions can enable banks to scan thousands of transactions per second, improving their ability to combat financial crimes

Data Protection Bill 2018 (draft)
- The new bill is designed to compel companies to store copies of users' critical personal data in India
- However, the bill has failed to explicitly define 'critical data'. It will likely be introduced in the Parliament in June 2019

Integrated Customer Data
- Industry players are using mobile apps to integrate customer data across banking platforms to create a single source of truth (SSOT), and enable near real-time insights

Key Technology Trends

Hybrid cloud	**Hybrid cloud adoption** in India to increase to **43% by 2020**, from **13% in 2018**	
AI & robotics	**74% experts** believe that there is a strong need for **AI** in the **BFSI industry** to provide **proactive** and **personal customer support**	
Data centers	IT spending on **corporate-owned data centers will fall** by **80% by 2025**, and will be diverted to cloud services	
Big data & analytics	The analytics, data science, and Big Data industry in India is expected to **grow 7x by 2025** (2018)	
External storage	India's external storage market experienced **23.1% YoY growth** in **Q3 2018**, driven by the **banking** and professional services sectors (IDC)	

Key Pain Points in Adopting Cloud Services

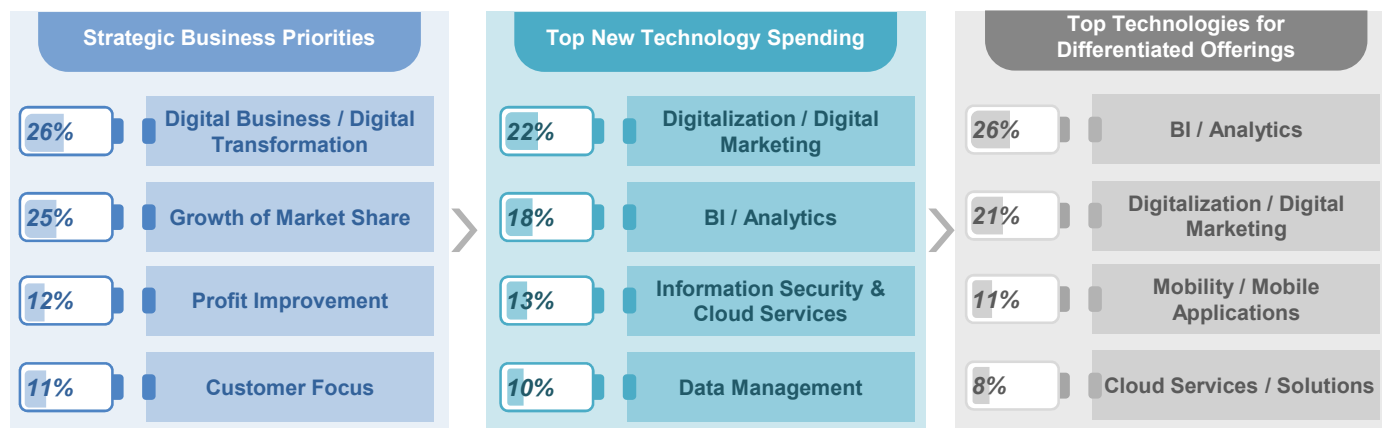|	
46%	**Financial Institutions (FIs)** are under pressure **to migrate all applications to the cloud**
49%	Experts believe that **cloud adoption** will prompt the **restructuring** of **existing IT** structures within companies.
31%	**FIs lack the right skill sets** to manage and derive the maximum value from **cloud investments**
91%	Company experts believe **cloud computing** has **increased** the **efficiency** of their IT departments
29%	**FIs** have concerns about **integration with cloud vendors**

Survey: IDG Cloud Computing Survey - 2018; For 550 IT & Security decision makers
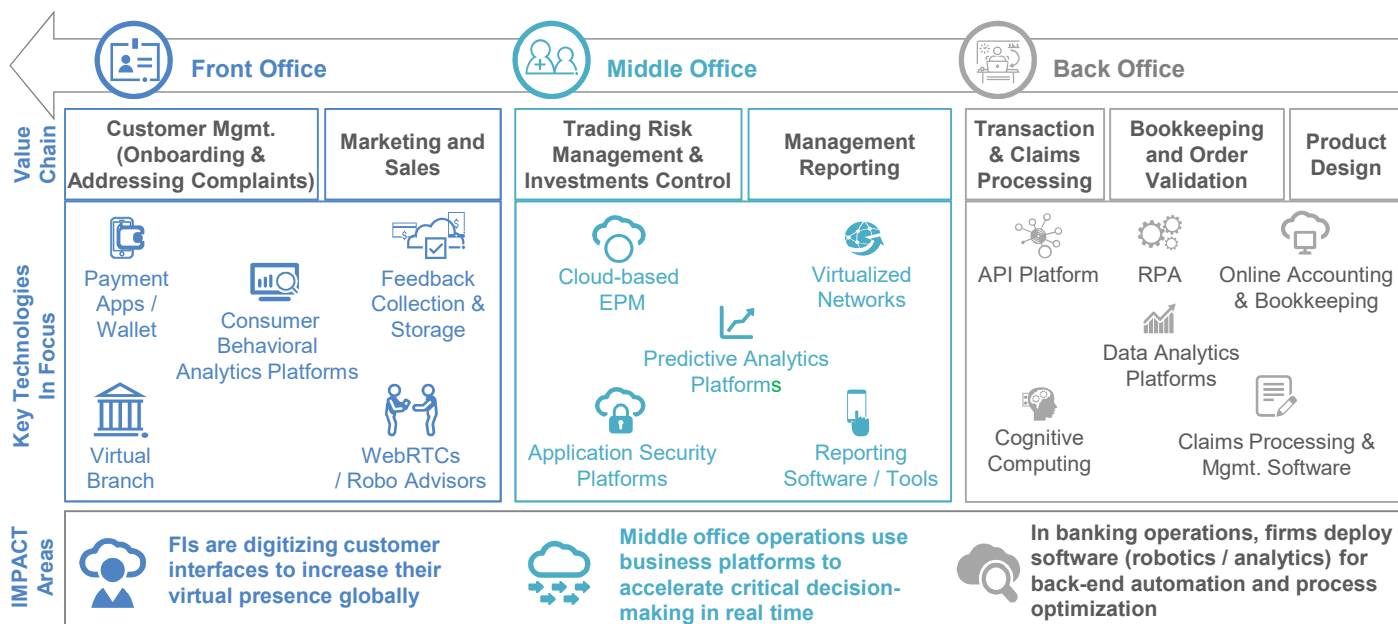
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Strategic Business Priorities

%	Priority
26%	Digital Business / Digital Transformation
25%	Growth of Market Share
12%	Profit Improvement
11%	Customer Focus

Top New Technology Spending

%	Technology
22%	Digitalization / Digital Marketing
18%	BI / Analytics
13%	Information Security & Cloud Services
10%	Data Management

Top Technologies for Differentiated Offerings

%	Technology
26%	BI / Analytics
21%	Digitalization / Digital Marketing
11%	Mobility / Mobile Applications
8%	Cloud Services / Solutions

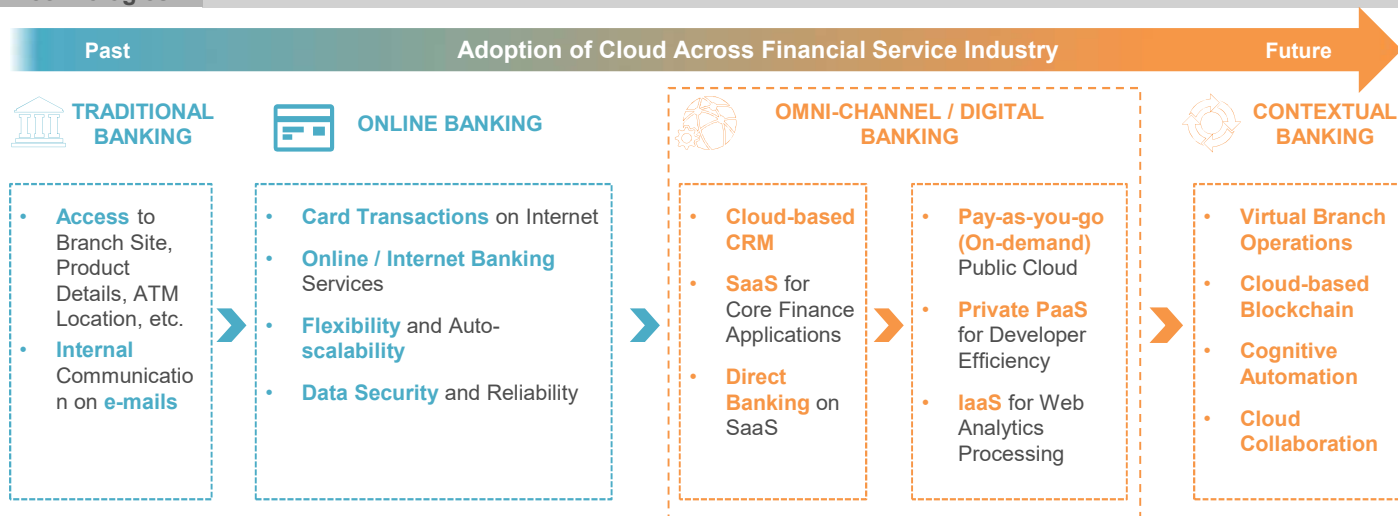*Survey: 2018 CIO Agenda Survey - Gartner ; 3,160 CIOs including 354 banking and investment services CIOs*

Impact on BFSI Value Chain

To increase *operational efficiency*, financial service providers are *digitizing* their *office operations* through *cloud-based software* and *technology platforms*

Front Office — Middle Office — Back Office

Value Chain:

Customer Mgmt. (Onboarding & Addressing Complaints)	Marketing and Sales	Trading Risk Management & Investments Control	Management Reporting	Transaction & Claims Processing	Bookkeeping and Order Validation	Product Design

Key Technologies In Focus:

- Payment Apps / Wallet
- Consumer Behavioral Analytics Platforms
- Feedback Collection & Storage
- Virtual Branch
- WebRTCs / Robo Advisors
- Cloud-based EPM
- Predictive Analytics Platforms
- Application Security Platforms
- Virtualized Networks
- Reporting Software / Tools
- API Platform
- RPA
- Online Accounting & Bookkeeping
- Data Analytics Platforms
- Cognitive Computing
- Claims Processing & Mgmt. Software

IMPACT Areas:

- FIs are digitizing customer interfaces to increase their virtual presence globally
- Middle office operations use business platforms to accelerate critical decision-making in real time
- In banking operations, firms deploy software (robotics / analytics) for back-end automation and process optimization

Adoption of Cloud Technologies

The Financial Services industry is implementing **cloud-based technologies** to facilitate **online banking,** and to provide **omni-channel** and **contextual banking** experiences
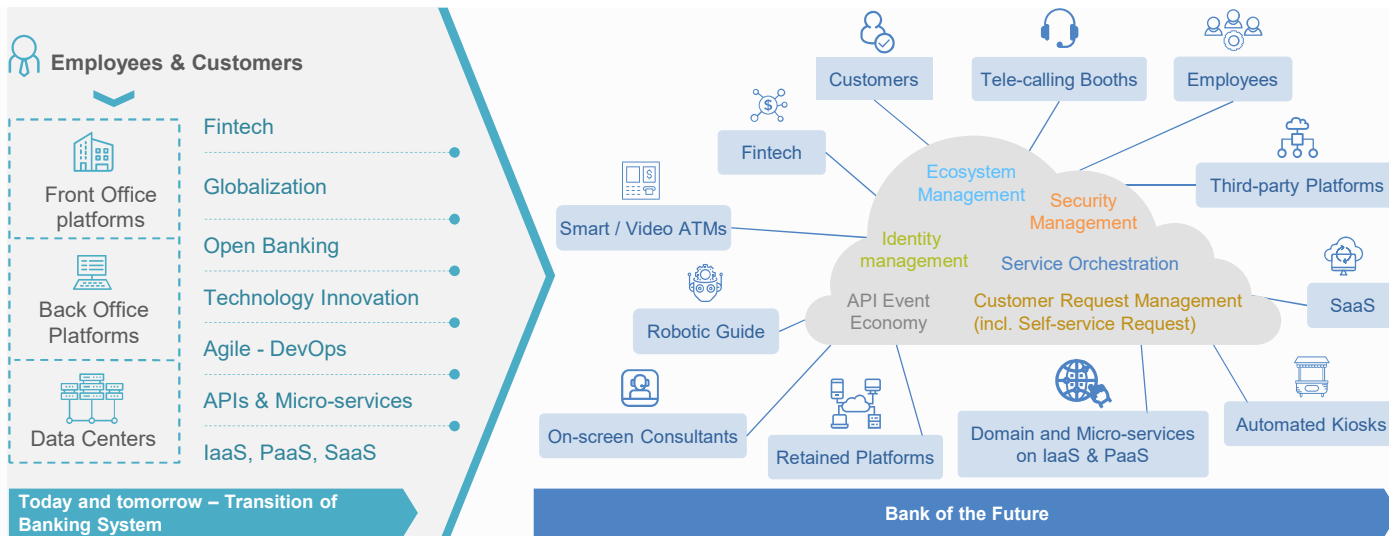
Adoption of Cloud Across Financial Service Industry

Past → Future

TRADITIONAL BANKING
- **Access** to Branch Site, Product Details, ATM Location, etc.
- **Internal** Communication on **e-mails**

ONLINE BANKING
- **Card Transactions** on Internet
- **Online / Internet Banking** Services
- **Flexibility** and Auto-scalability
- **Data Security** and Reliability

OMNI-CHANNEL / DIGITAL BANKING
- **Cloud-based CRM**
- **SaaS** for Core Finance Applications
- **Direct Banking** on SaaS
- **Pay-as-you-go (On-demand)** Public Cloud
- **Private PaaS** for Developer Efficiency
- **IaaS** for Web Analytics Processing

CONTEXTUAL BANKING
- **Virtual Branch Operations**
- **Cloud-based Blockchain**
- **Cognitive Automation**
- **Cloud Collaboration**

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Fintech & Bigtech Disruptions

Fintech and **bigtech** disruptions, combined with the **explosion of application program interfaces (APIs) and micro-services**, are creating exciting **opportunities for cloud and data center providers**

Employees & Customers

- Front Office platforms
- Back Office Platforms
- Data Centers

- Fintech
- Globalization
- Open Banking
- Technology Innovation
- Agile - DevOps
- APIs & Micro-services
- IaaS, PaaS, SaaS

Today and tomorrow – Transition of Banking System

- Customers
- Tele-calling Booths
- Employees
- Fintech
- Third-party Platforms
- Smart / Video ATMs
- Ecosystem Management
- Security Management
- Identity management
- Service Orchestration
- SaaS
- Robotic Guide
- API Event Economy
- Customer Request Management (incl. Self-service Request)
- On-screen Consultants
- Retained Platforms
- Domain and Micro-services on IaaS & PaaS
- Automated Kiosks

Bank of the Future

Conversation Triggers

In the near future, *cloud-based applications, AI, analytics and public cloud storage* will be the most sought after technologies for the BFSI sector

Impact on Demand → ● High   ◐ Medium   ○ Low

Infrastructure Enabler

Technology / Trend	Conversation Triggers	Data Protection	Cloud Services	Transformation	DC-Colo	Migration
Cloud-based Apps	• Over the next **24 months, 30% of banks across the world** will allocate **50%** of their expenditure for **cloud-based apps** (2018) • **22** of India's leading **insurance** companies are using **Microsoft Azure and Office 365**	●	●	●	◐	◐
Blockchain	• Hosted on **MS Azure**, BankChain, a community of 30 banks from India and the Middle East, is working to implement **blockchain in banking** (2017) • **SBI** estimates a **7% reduction in intermediaries, due to the use of blockchain** (2017)	◐	◐	◐	◐	○
AI & Robotics	• **93% of Indian bankers** are using AI to automate and take **critical data-driven decisions** – Accenture (2018) • Private banks, such as **HDFC and ICICI,** are already using **chatbots** to offer **customers service**	◐	●	◐	●	○
Data Center (DC) & External Storage	• India's **data center** market reached **INR 319.5 Bn** in **2018**, driven by **modernization** of the **BFSI sector** and support from government policies • Organizations' demand for **high-performance** and **low-latency storage** solutions led to a triple-digit YoY growth of **all-flash arrays** in Q3 2018	●	●	●	●	●
Big Data	• The analytics, data science and Big Data industry in India registered a **CAGR of 33.5%** during 2016–2018 and the **BFSI sector has almost 100% adoption rate** (2018) • **SBI** plans to set up a **Big Data lake** to enhance customer offerings (2017)	◐	●	◐	●	○
Public Cloud	• **Public cloud service** revenue to grow to **INR 134.9 Bn** in **2019,** from INR 51.8 Bn in 2018 (Gartner) • **HDFC, ICICI, Kotak,** and **Axis** Bank use **Microsoft's public cloud**	●	●	○	◐	◐

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Service Comparison: Sify Vs. Competitors

Data Center Infrastructure

	Sify	Netmagic	CtrlS	Airtel	ST Telemedia	RCom
No. of DCs	9	11	6	10 (Nxtra Data)	16	9
Uptime	100% since last 10 years	99.990%	99.995%	99.982%	99.990%	-
Experience	18+ Years	~20 Years	~10 Years	12+ Years	~15 Years	~17 Years
Certifications	ISO9001, ISO27001, ISO20000, PCI, HIPPA, TIA942, PCI DSS	ISO27001, ISO9001, ISO20000, TIA942	ISO20000-1, ISO 27001, ISO 22301 (Mumbai DC is LEED certified)	ISO 22301 / 27001 / 20000-1	ISO 27001 / 20000 / 14000, TIA 942	ISO 9001 / 20001 / 27001 / 50001 / ISO 18001

Areas of Offense

- **STT GDC India does not have managed hosting or cloud services**, but partners with Tata Communications to offer managed hosting and cloud to end clients.
- **Netmagic's Noida and Chennai data centers operate on leased premises**, which make customers vulnerable to security threats
- RCom's Bengaluru data center (in Peenya) has been **facing accessibility and theft related problems**
- Sify operates a national MPLS network, **connecting 47 data centers**, including third-party data centers. Through its interconnections with global carriers, Sify can also **support Indian MNCs with international hosting and cloud requirements**

Areas of Defense

- **ST Telemedia and Airtel have more data centers than Sify Technologies.** Further, Airtel is planning to build 10 data centers across India
- CtrlS claims that together, its three datacenters, support **power capacity of 58 MW**. The company is planning to launch two new DCs in **Hyderabad (100 MW facility)** and another two in **Mumbai (60 MW facility).**
- Netmagic **leverages its parent company NTT Communications' improved managed and professional services capabilities** to win complex projects
- CtrlS' data centers have been rated by **4 by ANSI/TIA-942**

Cloud Portfolio Comparison

	Sify	TATA Comm.	Netmagic
Cloud Services Suite	• Goinfinit AWS (Public Cloud) • Cloudinfinit ✓ Enterprise Cloud ✓ VPE (Virtual Private Enterprise)	• IZO Private Cloud (Enterprise Cloud) • Managed Services for Azure and AWS • Cloud Containers, Storage, and Analytics under 'As a Service' Model	• Simplicloud (Public Cloud) • Private Cloud (Dedicated Private Cloud, Virtual Private Cloud, Integrated Hybrid Cloud Env.) • Migration as a Service, Managed Storage, Backup as a Service
Compute Environment	• Minimum Capacity of 48 vCPUs and 265 GB of vRAM Per Node • Offers a choice between HyperV and VMware hypervisors • BYOL policy for OS and DB (Windows Server, SQL Server, Red Hat, Oracle)	• Hypervisor Support for KVM, VMWare ESXi, and HyperV • OS Support – Windows, Ubuntu, and RHEL • Database – MySQL and MongoDB	• Hypervisor Support for VMware and HyperV • OS Support – Windows, RHEL, Ubuntu, SUSE, Debian • Database – MySQL, Oracle
Storage	Freedom of Choice between Three Tiers ✓ High-performance Tier ✓ Standard Tier ✓ Economy Tier Storage Type: NAS, Object, and All flash	• NetApp, EMC, and Cloudbyte Powered Storage services	*Info unavailable*
Uptime (at infra level)	• 99.50% per VPE • 99.90% for VPE – HA • 99.95% VPE – HA + DR	*Doesn't explicitly mention uptime commitment. Claims to offer enterprise-level SLAs*	*Doesn't explicitly mention uptime commitment. Claims to offer strong SLAs*
Connectivity	• IP Sec – VPN • SSL VPN Connectivity • Upto 100 Mbps Throughput • Global Cloud Connect (Cloud Connect Service)	Connectivity through • Public Networks (Public IP) • Private Networks (IP Sec Tunnel, MPLS, GDE) • IZO Private and Public Connect (Cloud Connect Service)	*Relies on NTT Communications to provide connectivity*

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Cloud Portfolio Comparison

	Sify	TATA Comm.	Netmagic
Security	• Integrated Security Services • vFirewall • IPS Protection • Network DDoS • Fortnox • SIEM • vUTM	• SIEM, ATP • Cloud WAF, UTM, DDoS (Arbor), IDP, Firewall Audit & Optimization • IDaaS, CASB, 2FA • GRC Consulting, Vulnerability Assessment	• Detection and Mitigation of Targeted Attacks on Critical Applications • Application Layer Detection and Mitigation (Powered by Arbor Networks) • IPS / IDS • SIEM
Reporting and Analytics	• Dashboards, Online Reports, Alerts, Watermarks, and Help Desk • Analytics for Infrastructure, Platform, and Applications	• Customized Reporting and Dashboards	• Customer Portal that Enables Configuration and Management of Cloud Environment
Backup and Recover	• Cloudinfint Backup (Of Data to be Protected) • DR on Geographically Distant Cloud Site	• Secure Cloud Backup Service	• Backup and Disaster Recovery Options
Managed Services	Integrated Managed IT Services (Single Partner Managing Cloud, Infrastructure, and Environment)	• Integrated Managed Services	• End-to-end Managed Services

Areas of Offense

- CtrlS has limited experience in supporting third-party cloud services, such as AWS and Microsoft Azure
- ST Telemedia and CtrlS don't have their own network backbone, and largely depend on partners for connectivity services; Sify has strong network presence in India
- Tata Communications has discontinued its public cloud service (Instacompute), as it was not able to compete with hyperscale cloud providers
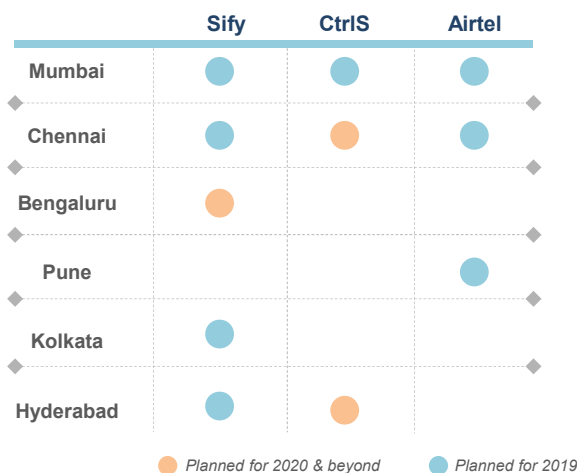
Areas of Defense

- Netmagic, after its integration with NTT Communications, provides a comprehensive range of managed services and connectivity to major cloud service providers
- Companies such as CtrlS, Netmagic, and Airtel claim to offer uptime of 99.99% for their cloud services
- Airtel is one of the empaneled partners for India's central government and several state governments' cloud-based projects; it poses serious competition to Sify, when it comes to government deals
- Reliance Jio is likely to adopt an aggressive pricing approach, similar to the one it adopted for its consumer services, for its enterprise IT / cloud services

(Source : Primary Interview)

Competitors' Strategic Focus Areas

Sify, CtrlS, and Airtel have announced plans to build new data centers in India. Netmagic, RCom, and other companies opened new facilities in 2018

	Sify	CtrlS	Airtel
Mumbai	●	●	●
Chennai	●	●	●
Bengaluru	●		
Pune			●
Kolkata	●		
Hyderabad	●	●	

● *Planned for 2020 & beyond*   ● *Planned for 2019*

- Netmagic opened new data centers, one each in Mumbai and Bengaluru, in late 2018
- Its Bengaluru data center spans across 250,000 sq. ft., while the Mumbai site spans across 300,000 sq. ft. The company plans to add 150 personnel to its current workforce of 1,270, as it looks to grow further
- RCom opened a hyperscale data center in Mumbai in mid-2018
- The company also plans to build connected data centers in key hubs across India, including Bengaluru, Hyderabad, and Chennai
- CtrlS is investing ~INR 2 Bn on infrastructure expansion, to target the BFSI sector
- The company is setting up Tier 4 facilities in Hyderabad (~100 MW), Mumbai (60MW), and Chennai; these will take its data center footprint to 5 million sq. ft. by 2020

Netmagic

RCOM

CtrlS

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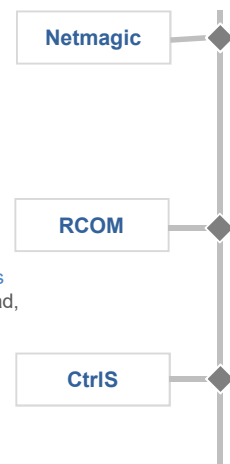
Digitization and government initiatives are compelling data center service providers to **invest heavily in building new data centers**

Focus on Cloud Services

Increasing demand in India has led companies, such as Netmagic and CtrlS, to amplify their focus on cloud services

- Netmagic is planning to target customers who are looking to adopt a multi-cloud environment. It plans to offer a one-stop solution for data migration to private, public, and third-party cloud services such as AWS, Google, and Microsoft

- CtrlS is also investing heavily (~INR 2 Bn) in infrastructure to tap the growing cloud market in India

Rise of Reliance Jio

After disrupting the consumer telecom space, Reliance Jio is planning to step into the enterprise service segment, specially cloud, IoT, and network services

- Reliance Jio has started testing its public and private cloud within Reliance group companies

- It plans to develop a state-of-the-art green field data center in an upcoming 100-acre IT hub in Kolkata, West Bengal

Airtel Bets BIG on Datacenters

Bharti Airtel is preparing to play a bigger role in the enterprise segment through a new cloud and data center strategy, under which it will undertake the following

- Airtel's wholly-owned data center unit, Nxtra Data Ltd, is planning to set up 10 new data centers, including four in Pune, Chennai, Mumbai, and Kolkata

- The company's new data centers are being planned to tap the cloud opportunities that have emerged following the Indian government's regulation on data localization

Sify Technologies' Key USPs for Data Center Services

Build your own SLA

Sify's GoInfinit VPE allows customers to build their IT infrastructure with single or multiple nodes across one cloud site or distant cloud sites. This enables customers to build their private cloud for test / development with 99.50% SLA (single – site) alongside 99.90% SLA for production IT in HA architecture.

Managed Services

Sify offers an integrated managed services portfolio that includes services for captives, AWS, Microsoft Azure, and SAP infra. It extends a wide range of services, including disaster recovery, managed security, database management, and middleware management, and leverages ServiceNow and CA UIM (industry best tool platforms) to offer best-in-class ITSM and automation

Flexible Consumption Model

Sify's Private cloud (VPE) offers a combination of pricing models, as under

- Committed Model: Customers pay for a committed capacity for a minimum contract period, and scale up as their businesses require
- Metered Consumption: Customers' usage is metered on a monthly basis, and they are billed as per usage

Seamless Connect

Sify can provide seamless connectivity to datacenters and hyperscale cloud service providers (through Cleanconnect service), as it operates a national MPLS network that connects 45+ datacenters, including third-party datacenters. Its collaboration with global carriers also allows Sify to support Indian MNCs with their international hosting and cloud requirements

Expertise in Managing Third-party Cloud Environment

Sify has experience in supporting Microsoft environment and VMware; it is SAP-certified for hosting cloud, HANA, and application services, as well as SAP migration

Robust Data Center Infrastructure

- Data Centers are running on 100% uptime since 2008
- 3 to 4 distinct fiber entry paths to the Data Center building provides resiliency on fiber routes
- Truly Carrier Neutral: More than 90% of fiber links are from non Sify Telecom providers
- Power densities from 3 KW to 15 KW per cabinet
- Hyper scale Data centers from 12 to 36 MW in key cities providing ample expansion capabilities
- Multiple Internet Exchange Ecosystem facilitating OTTs and ISPs interconnect in Sify Data Centers
- Services include Prelaid bulk Fiber (as per specifications), single to 10+ cross connects on demand with minimum lead-time

- Telecom services
- Data center services
- Cloud & managed services
- Application integration services
- Transformation integration services

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