

DRIVING INNOVATION IN PATIENT CARE

Digital Transformation in
Healthcare



SIFY SERVICES

REIMAGINING YOUR BUSINESS FOR A DIGITAL FUTURE

Accessibility and availability of quality healthcare is a key concern for any society. Digital is rapidly reshaping the healthcare delivery models across the globe creating a connected healthcare ecosystem. Healthcare providers are looking to improve delivery of patient care, treatment planning and process optimization by leveraging benefits of emerging technologies and agile IT infrastructure.

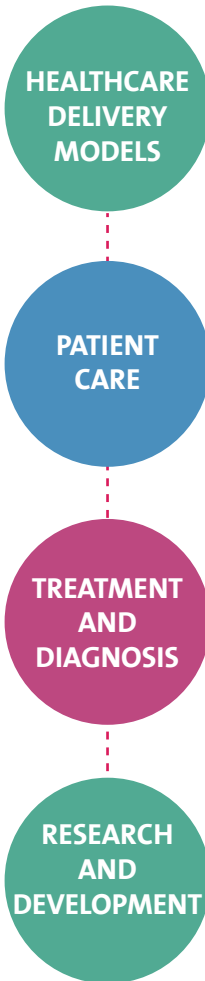
TRADITIONAL

- Clinicians
- Hospitals

- Single window treatment
- Physical patient records

- Health care professional driven treatment
- Use of standalone monitoring and operating devices

- High cost, high return clinical trials
- Limited data insights in product development to predict treatment response



FUTURE STATE

- Telemedicine enabled clinical e-visit
- Designing care pathways using mHealth solutions

- Enhanced patient engagement with the use of wearables leading to improved monitoring and medication adherence
- Real-time access to patient records and use of analytics for treatment planning

- Remote clinical monitoring with web integrated wireless monitoring devices
- Targeted treatments with robotically enhanced surgery platforms to access detailed radiological information

- Leveraging a telemedicine platform to conduct virtual trials
- Application of data analytics and artificial intelligence to determine treatment response among patients
- Internet of medical things, devices and software applications that can communicate with various healthcare IT systems

SIFY SERVICES

BUSINESS TRANSFORMATION IMPERATIVES TODAY



Changing paradigm of medical diagnosis
with new sources of information such as community/
genetic data/ global health databases etc.



Improve care quality
by advancing treatment capabilities and technology
led workforce



Create broader collaborations within the healthcare ecosystem
to improve treatment effectiveness and safety



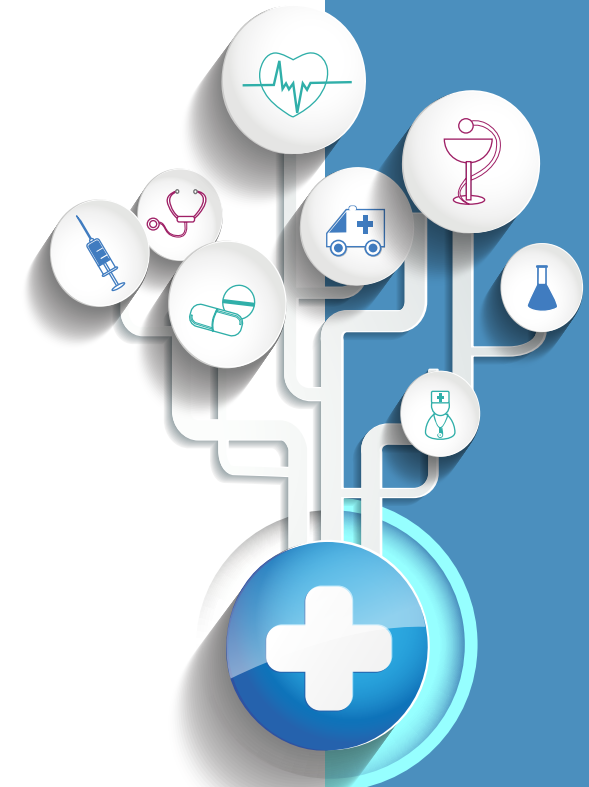
Elevate regulatory compliance and risk management
covering environmental and data security



Agile and flexible technology landscape
for integration across business operations and
medical systems



Adopt patient-centric strategies
with seamless experience across specialties



SIFY SERVICES

Digital is rapidly reshaping the healthcare delivery models across the globe creating a connected healthcare ecosystem. Healthcare providers are looking to improve delivery of patient care, treatment planning and process optimization by leveraging benefits of emerging technologies and agile IT infrastructure.

TECHNOLOGY TRENDS TRANSFORMING THE INDUSTRY



Hybrid IT as backbone

Key elements of a hybrid IT infrastructure acting as the building blocks of enabling the implementation of emerging technologies



Cloud and big data analytics

- Cloud-based, inter-operable platforms for managing electronic health records (EHRs)
- Improve cross-functional collaboration by eliminating paper-based medical records, film-based radiological images, handwritten notes, fragmented IT systems, and silos of information with a simplified cloud-based architecture
- With an expected large and continuing influx of data, many hospitals will need cognitive analytics to design personalized treatment plans



Artificial intelligence / Machine learning (AI/ML)

- AI powered, virtual care assistants providing assistance in diagnosis, treatment, and recovery management
- Virtual assistants also serve as data repository for the patient's medical history, test results, consultation times, and appointment schedules



Virtual reality (VR)

- Virtual training can help surgeons map out surgeries before conducting the procedures
- Virtual training also can increase specialized expertise available to a larger audience spread across geographies



Robotic process automation (RPA)

- Automating hospital ancillary and back-office services can generate cost and time efficiencies right from delivering medications, transportation of samples, collection of diagnostic results, and schedule pharma/essentials deliveries as a prescheduled task or a real-time request
- Enhance procedural precision and accuracy with automated surgical platforms

SIFY SERVICES

SIFY AS AN ENABLER OF DIGITAL TRANSFORMATION

SIFY'S DATA CENTER AND CLOUD TRANSFORMATION SERVICES

ENABLE SEAMLESS INTER-OPERABILITY AND MANAGEMENT OF ELECTRONIC HEALTH RECORDS

The move towards excelling at patient experience and providing round-the-clock care services will be driven by data analytics which requires resilient, robust, high-availability infrastructure

SIFY'S APPLICATION AND PLATFORM SERVICES

ACHIEVE PROCESS EFFICIENCY AND ACCELERATE PRODUCTIVITY

Streamline employee services and customer facing processes; enable setting up the infrastructure & platform environment to meet your employee (self-service, collaboration, productivity, learning) and patient (treatment information, security) requirements

SIFY'S TECHNOLOGY INTEGRATION SERVICES

EFFECTIVELY INTEGRATE MULTIPLE CLINICAL SYSTEMS TO IMPROVE COLLABORATION, ENGAGEMENT AND QUALITY OF CARE

Advancement in core healthcare capabilities will be driven by artificial intelligence which requires data management from hybrid IT systems

SIFY'S NETWORK TRANSFORMATION SOLUTIONS

CREATE A CONNECTED HEALTHCARE ECOSYSTEM ACROSS HOSPITALS, DIAGNOSIS, WELLNESS, MEDICAL DEVICES AND INSURANCE SECTORS

The network is uniquely positioned to support the requirements of connectivity across healthcare facilities and mobile devices

SIFY'S MANAGED SECURITY SERVICES

REAL-TIME MONITORING AND MANAGEMENT

Through preventive, detective and corrective mechanisms to combat emerging cyber security threats to confidential medical records

SIFY MOVES UP IN GARTNER MAGIC QUADRANT FOR HYBRID CLOUD



Sify has emerged a challenger in providing managed hybrid cloud hosting services with unique proposition combining infrastructure, public cloud, connectivity and consistent service delivery.

SIFY SERVICES

DIGITAL TRANSFORMATION GOALS

Goal

Advanced patient engagement to redefine care delivery

- Maneuver an omni-channel healthcare services delivery system
- Improve self-management through remote monitoring capabilities merchandising
- Comprehensive real-time patient information at the point

Goal

Evolve into an empowered workforce

- Develop an augmented workforce to enhance capabilities of incumbents
- Enhance surgical precision by providing a simulated environment
- Automate recruitment using cognitive analysis

Goal

Treatment innovation transforming healthcare value creation

- Upgrade monitoring programs to improve patient recoveries
- Leverage advanced data analytics to develop treatment plans
- Automate recruitment using cognitive analysis

Technology enablers

- IoT
- Bio-sensing
- Integrated platforms

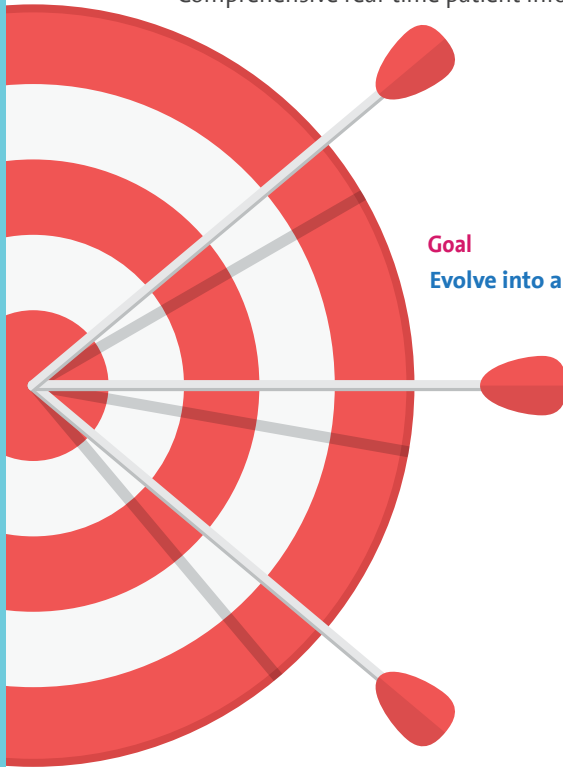
Sify services



- Augmented reality
- Artificial intelligence
- Robotic process automation



- Robotic process automation
- IoT
- Data analytics



 Data Centre Transformation (Cloud) and Infrastructure Services

 Network Transformation and Connectivity Services

 Application and Platform Services

 Managed Security Services

 Technology Integration Services

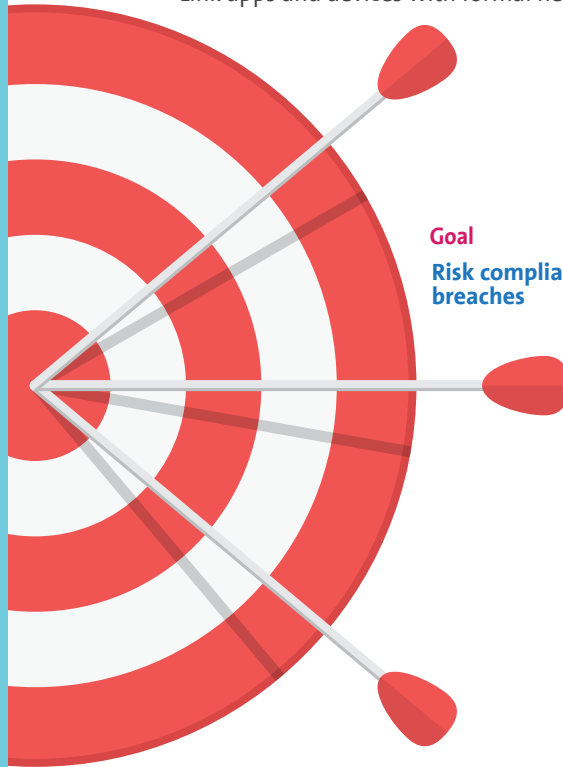
 Internet of Things

SIFY SERVICES

DIGITAL TRANSFORMATION GOALS

Goal
Operational excellence aided by technological interventions

- Automate hospital ancillary services to optimize cost and time efficiencies
- Build partnerships with niche healthcare providers to improve care quality
- Link apps and devices with formal healthcare system



Goal
Risk compliance to mitigate potential breaches

- Alleviate security concerns in health information exchanges
- Mitigating security gaps by making the source of the breach easily traceable
- Automate incident reporting in line with HIPAA compliance

Goal
Technology transformation to enable value based healthcare

- Data inter-operability across healthcare platforms
- Modular and agile infrastructure
- Cloud enabled on-demand scalable IT landscape

Technology enablers

- Robotics
- Artificial intelligence
- Blockchain
- Data analytics

Sify services



- Blockchain
- Robotic process automation
- Data analytics



- Cloud
- Seamless connectivity
- Modular IT architecture



SIFY SERVICES

 Data Centre Transformation (Cloud) and Infrastructure Services

 Application and Platform Services

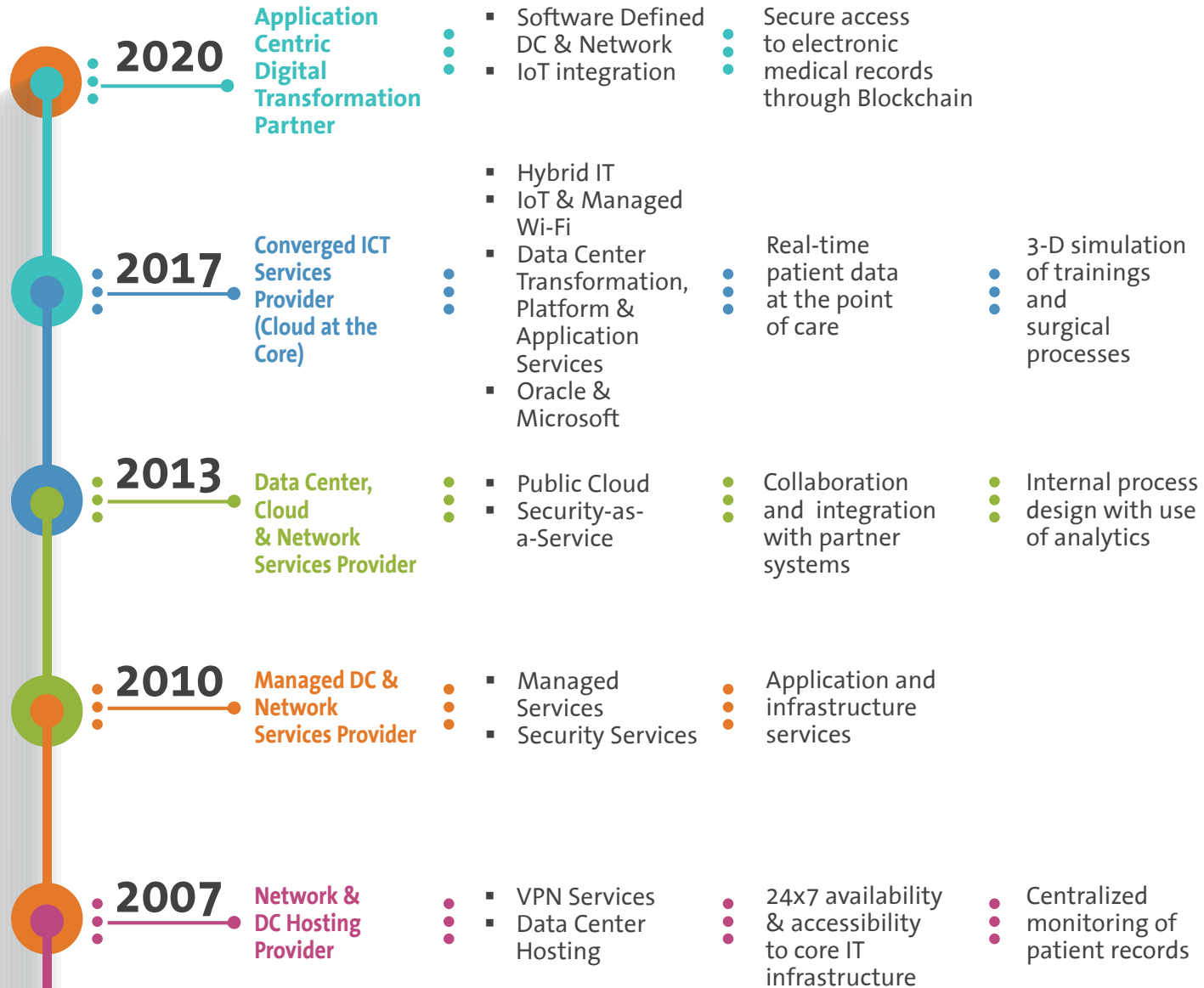
 Technology Integration Services

 Network Transformation and Connectivity Services

 Managed Security Services

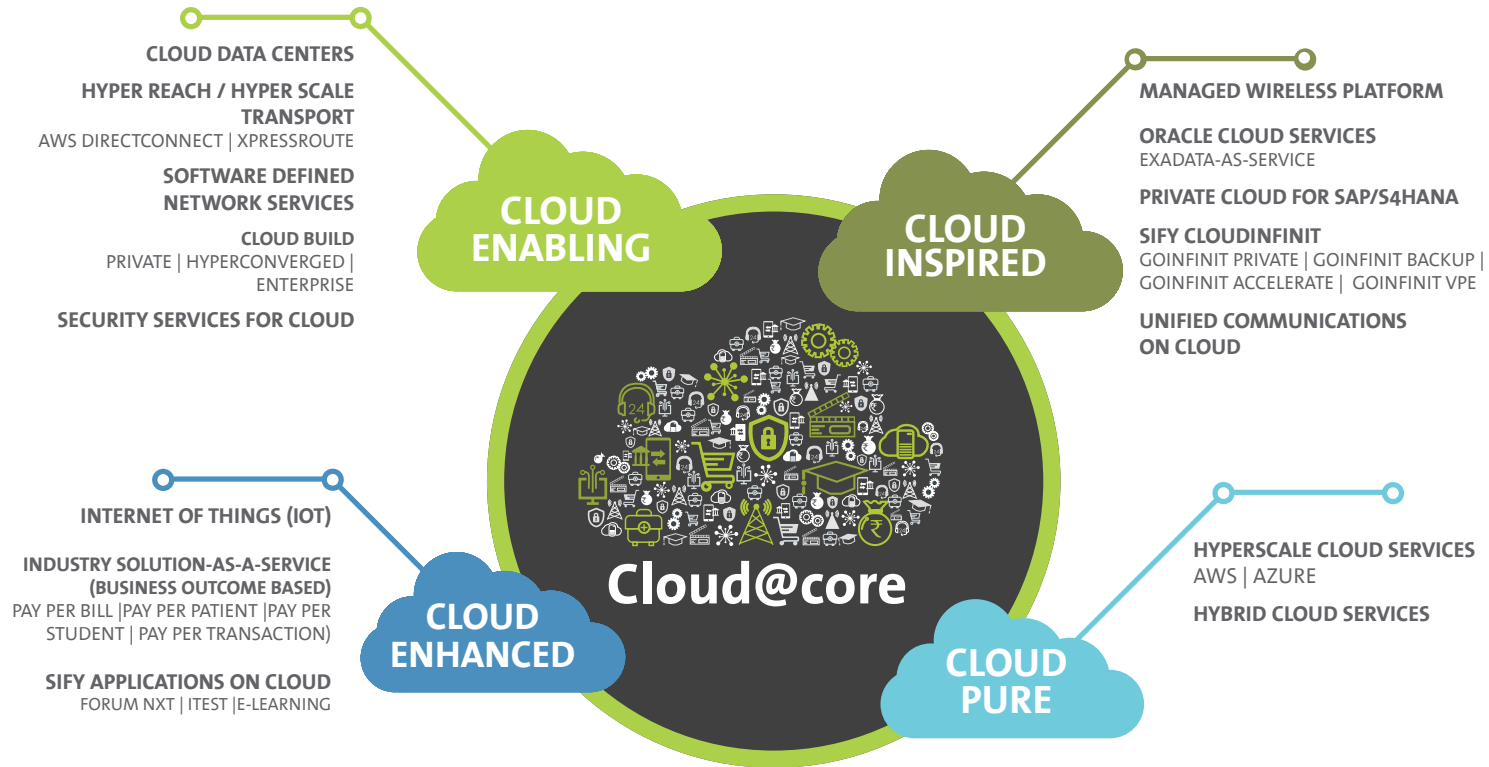
 Internet of Things

SIFY'S EVOLUTION AS A DIGITAL TRANSFORMATION PARTNER



SIFY SERVICES

CLOUD@CORE



SIFY SERVICES

CLOUD AND CO-LOCATION TO ENABLE BORDERLESS IT

BUSINESS DRIVERS FOR ADOPTION OF THE NEW ENTERPRISE DATA CENTER

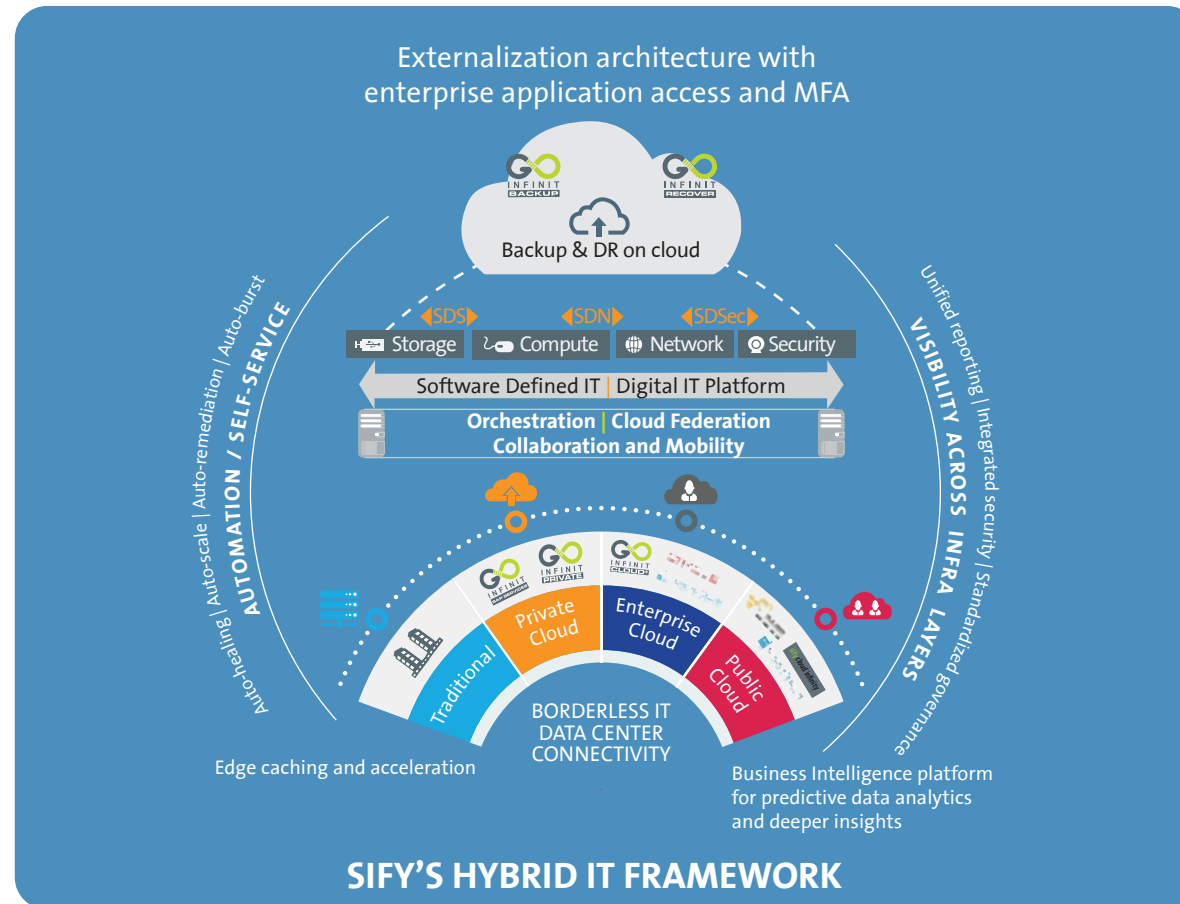
- Rising systems and networking cost due to increased penetration of medical devices
- High exposure to security threats – mandatory compliance and security governance requirement
- Zero disruption, high available IT with agility, flexibility and hyper-automation
- Data protection and long term retention of records
- Externalization to enable collaboration and integration with partner systems
- Explosive data growth with the advent of wearable technologies, patient records, compliances



Service-led view of data center transformation and cloud solutions

- Right-fit IT architecture across public, private, enterprise cloud and/ or co-location
- Public cloud choices across AWS, Microsoft Azure and Sify enterprise cloud
- Future-ready IT leveraging software-defined network, security, storage and hyper- automation
- Secure storage choices across private and public data stores compliant to healthcare needs
- Application-centric IT architecture for mission critical apps such as SAP, Oracle, Microsoft etc.
- Backup and DR solution fully complaint to healthcare regulations with long term protection
- Zero trust security framework across traditional, private, public and enterprise IT
- Unified, integrated reporting for predictive analytics, business intelligence and AI

CLOUD AND CO-LOCATION TO ENABLE BORDERLESS IT



SIFY SERVICES

Service highlights

- Integrated play across network, data center, IT & security
- Solution choices across dedicated, public or hybrid models
- Aggregation partner across OEM stack, private / public cloud
- 10 public and private cloud service providers at 30+ global locations
- On-demand provisioning & simplified management – add on to MPLS network
- Premium performance / high resiliency

NETWORK TRANSFORMATION AND CONNECTIVITY BACKBONE OF DIGITAL TRANSFORMATION

Business drivers for adoption of integrated networking platform

Scale

With advent of technologies such as Internet of Things (IoT), cloud and mobility, the scale of the network and the endpoints has grown exponentially

Complexity

Non-converged voice and data networks over multiple service providers

Agility and Speed

Constant need to support change in the application landscape and ensure continuous service assurance in a global market

Security

Risk of security gaps and absence of uniform security cover across multiple platforms

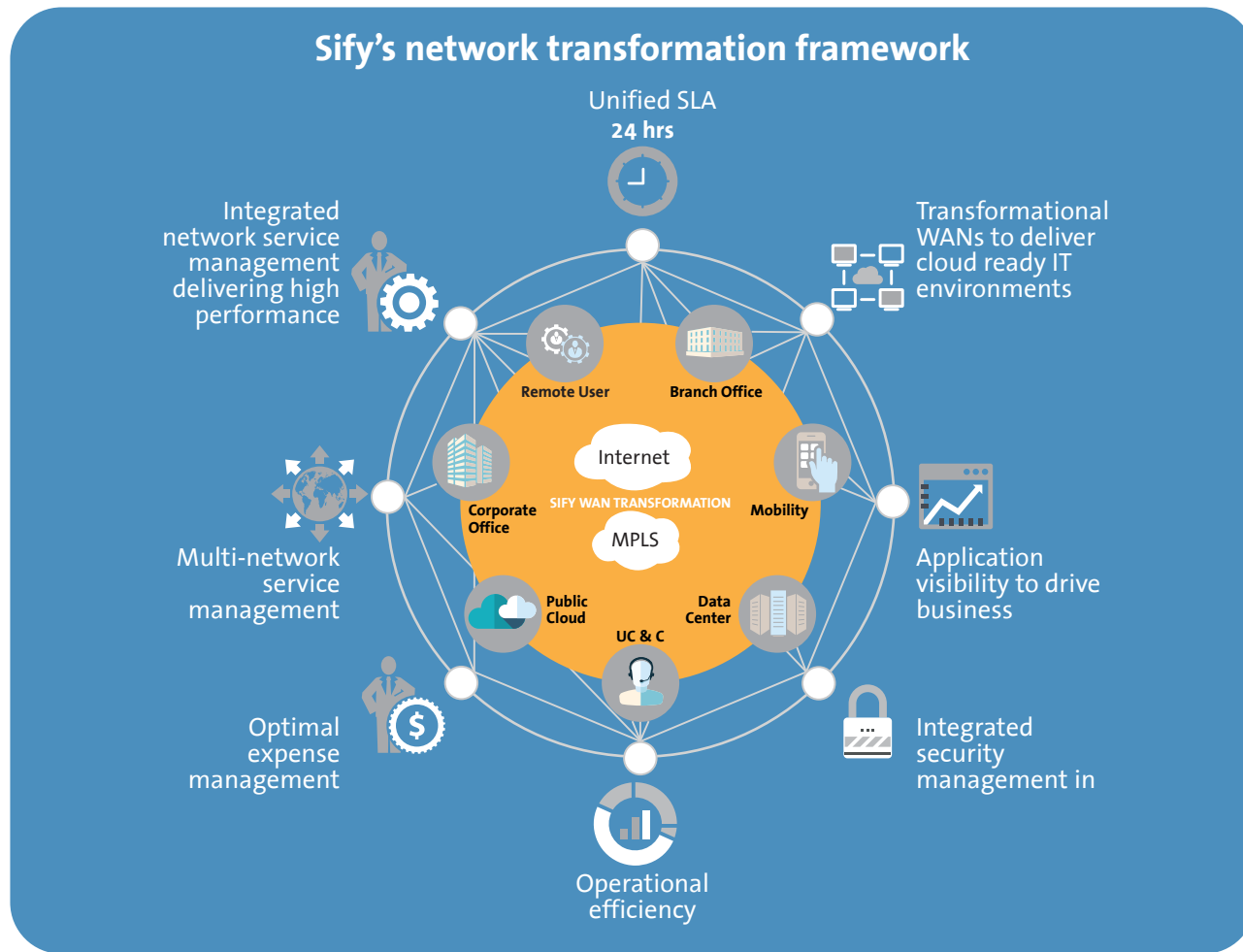


Service-led view of network transformation

- Service-oriented network architecture to ensure reliable enterprise-grade 24x7 connectivity
- Multi-location VPN and Internet services to build a highly reliable WAN setup
- Pro-active network and security monitoring and management through an integrated network operations center (NOC) & security operations center (SOC)
- Global connectivity across cloud nodes for clustered applications, storage replication and disaster recovery services
- Deep expertise across cutting-edge network and security technologies
- SDN (Software Defined Network) CoE (Center of Excellence) to develop world-class SDN centric solutions

SIFY SERVICES

NETWORK TRANSFORMATION AND CONNECTIVITY BACKBONE OF DIGITAL TRANSFORMATION



Service highlights

- Extensive reach across over 1500+ cities
- Global service coverage in over 130+ countries
- 100G ready DCI and cloud interconnect network in 6 cities
- Integrated ITIL based NOC and SOC
- Deep skill sets around network and security domain
- Cloud enabled services on a consumption model

SIFY SERVICES

UNIFIED SECURITY MONITORING AND MANAGEMENT ACROSS INTERNAL AND PARTNER SYSTEMS

Business drivers for securing IT environment

- Advanced data breaches using sophisticated techniques
- Increasing guidance and frameworks from industry organizations
- Increased exposure to hacktivism due to integration of new technologies
- Privacy and data protection regulations

Service-led view of managed security services

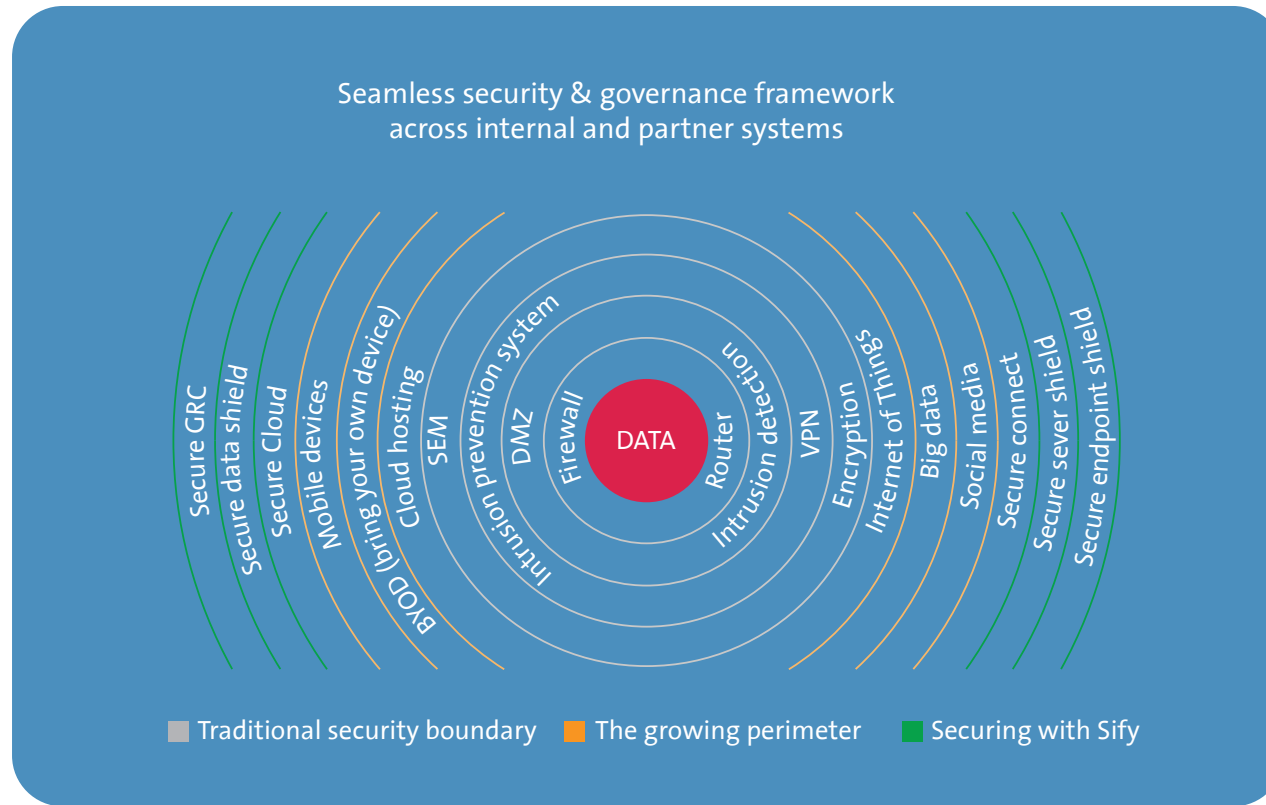
- Mature threat intelligence and analytics framework with integration of hunting and deception platform
- Gartner's intelligence driven security operations centre
- Secure cloud implementation by building tiered protection layers around data that includes multiple perimeter rings of defense
- Secure Connect solution tracks and filters legitimate network connections with customized policies and granular access controls
- Secure Data Shield provides bidirectional protection against malicious sources and sophisticated attacks to ensure data integrity and confidentiality
- Secure Endpoint Shield stops targeted attacks and advanced persistent threats with intelligent security and layered protection
- Sify Assure team delivering audit and compliance around IRDA, IT security guidelines, best practices benchmarking, ISMS, VAPT, Web App, Mobile App testing services
- Unified dashboard portal based security service delivery



SIFY SERVICES

UNIFIED SECURITY MONITORING AND MANAGEMENT

ACROSS INTERNAL AND PARTNER SYSTEMS



Service highlights

- Comprehensive framework of applicable IRDAI and other cyber requirements
- Security transformation capability including design, deploy and managed services
- Threat intelligence to reduce risk from unknown vulnerabilities and threats
- First provider of cyber threat intelligence based security operations
- Partnerships with all leading security OEMs and distributors
- Automation driven security incident alerting and ticketing

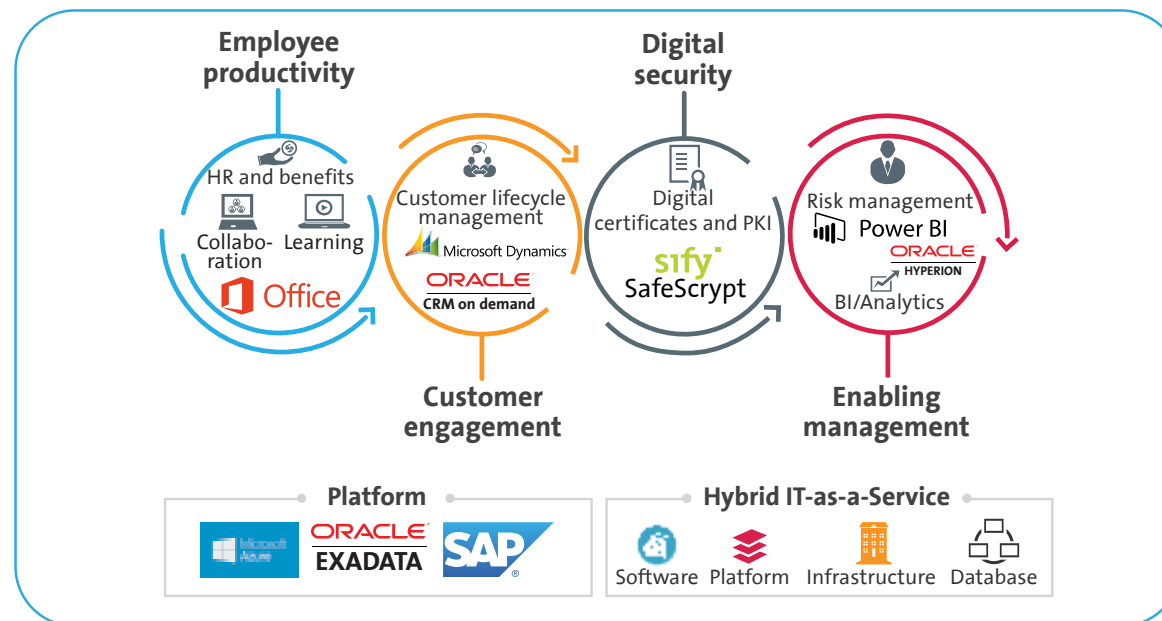
SIFY SERVICES

BUILD A HIGH-QUOTIENT DIGITAL WORKFORCE TO DRIVE PROCESS EFFICIENCIES

Business drivers for securing IT environment

- Achieve faster time-to-market products within a complex multi-vendor environment
- Cost-optimization through reduction in hardware and resource costs for system management
- Cloud-based solutions with scalable and elastic capabilities
- Improved transparency and visibility within the organization through resilient platforms

Service-led view of application and platform services



SIFY SERVICES

Service highlights

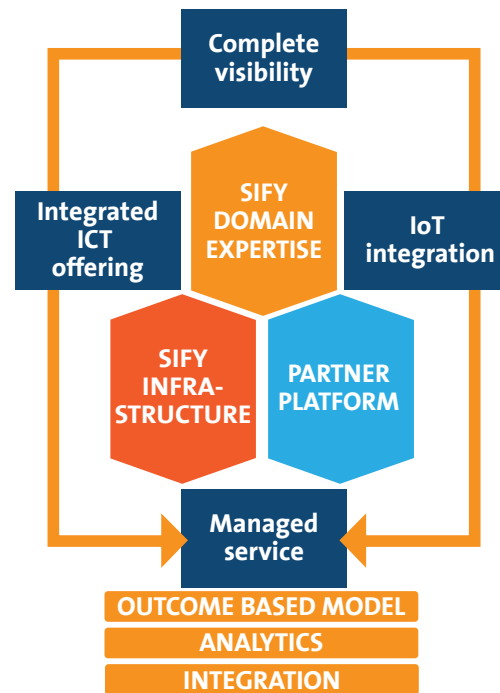
- End-to-end offerings with infra, platform and software-as-a-service for training, surgical support and integration for therapies
- State-of-the-art infrastructure for hosting applications and platforms on the cloud
- Comprehensive managed services including infra and application services

IOT ENABLING DYNAMIC REAL-TIME ACCESS TO NEW INFORMATION

Business drivers for creating a connected ecosystem

- Creation of an agile, responsive, automated and business-aligned IT environment
- Accelerate product development to stay current and relevant
- Turn real-time data into insight, action and new business models through ubiquitous connectivity
- Build a more efficient workforce and transform underlying process by connecting people with data

Service-led view of turnkey IoT solutions



IoT in Healthcare

- High value asset tracking in hospital
- Telematics based ambulance management
- Patient tracking
- Assisted health
- Inventory management
- Hospital energy management
- Logistic management of clinical lab
- Blood bank temperature monitoring

NEC  **aeris**

SIFY SERVICES

Service highlights

- Sify along with partners brings complete IoT ecosystem
- Outcome-based managed service model creating an express innovation platform for design, configuration and integration of IoT-based connected products and services
- Achieve ROI as early as 6 months with enterprise-grade systems and applications

ENGAGEMENT MODEL

Less hardware, less people and less license

Assets + services systems

Owned by the client and annuity based payout for services



Usage-based

No upfront investment by client and payout is based on consumption

Outcome-based
Client engagement is based on defined business outcome generated by IT solutions and services

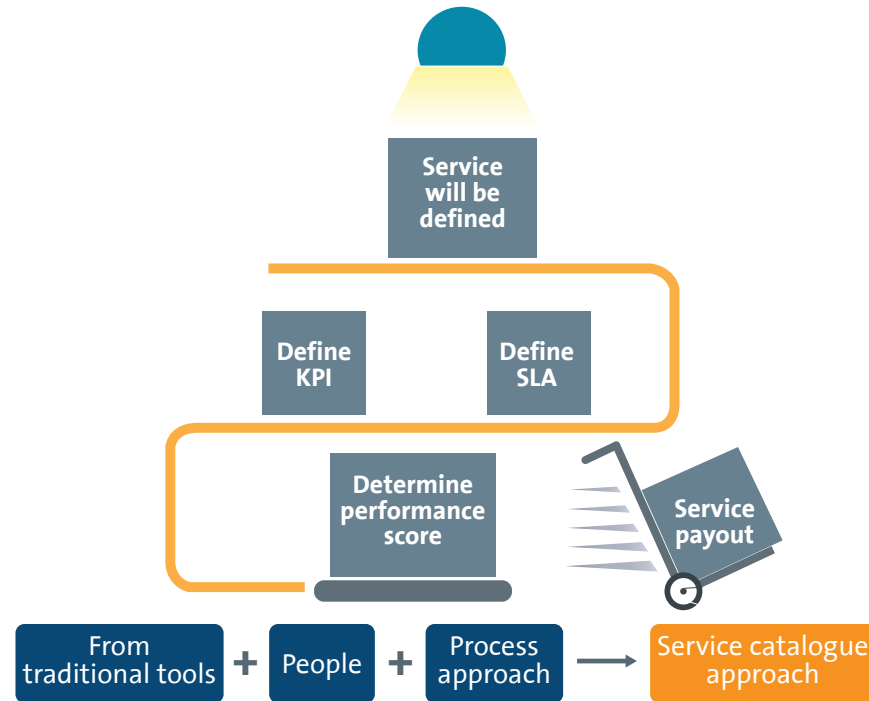
Component-based

Reduced upfront investment as client subscribes to infrastructure owned by Sify, as part of their overall infrastructure requirement

SIFY SERVICES

ENGAGEMENT APPROACH

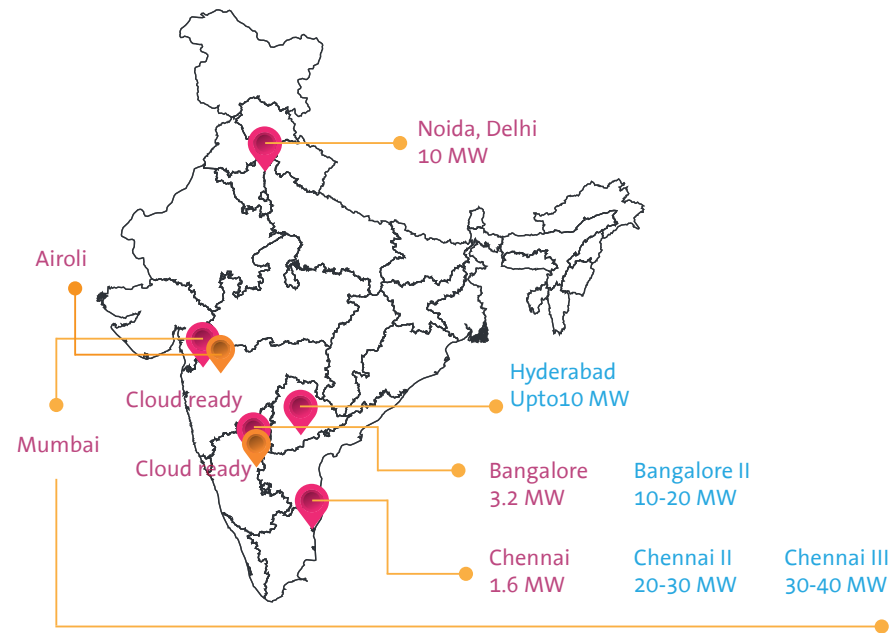
Service catalogue based managed services framework



Elements of service catalogue – illustrative	Elements of service catalogue – illustrative	Total service charges	Performance score	Payout eligible
Service catalogue	Asset management related service			
Service catalogue based payout	Backup, restore and archival related services			
Critical SLA metrics	IT operations			
Operational metrics	Email and directory related services			
SLA reporting	End-user system related services			
	Security related services			
	Service desk related services			
	Vendor management related services			
	Website management related services			
	Service delivery management (vendor's tool cost will be included here as tools enable the service delivery and management.)			
	Total payout			

SIFY SERVICES

OUR MAJOR DATA CENTERS AND CLOUD CENTERS FOOTPRINT



RABALE
MUMBAI
20 MW

RABALE
MUMBAI II
10-12 MW

RABALE
MUMBAI III
20-40 MW

VASHI
MUMBAI III
1.6 MW

AIROLI
MUMBAI
10 MW

Bangalore II
10-20 MW

Chennai II
20-30 MW

Chennai III
30-40 MW

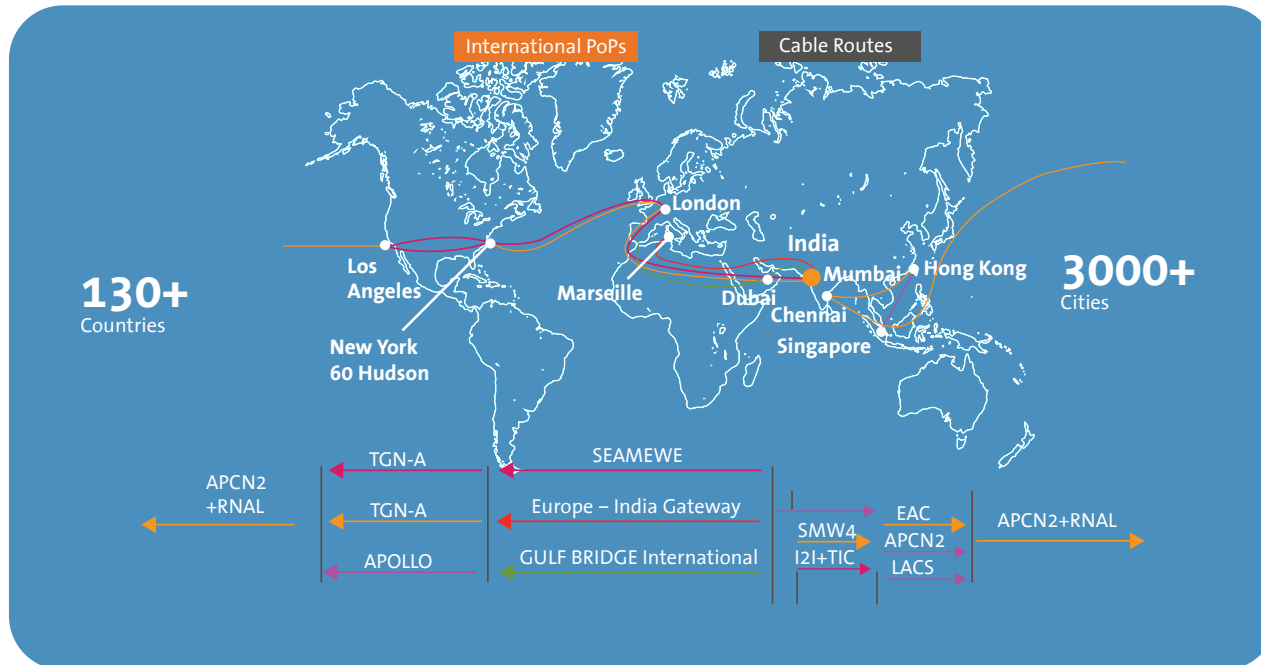
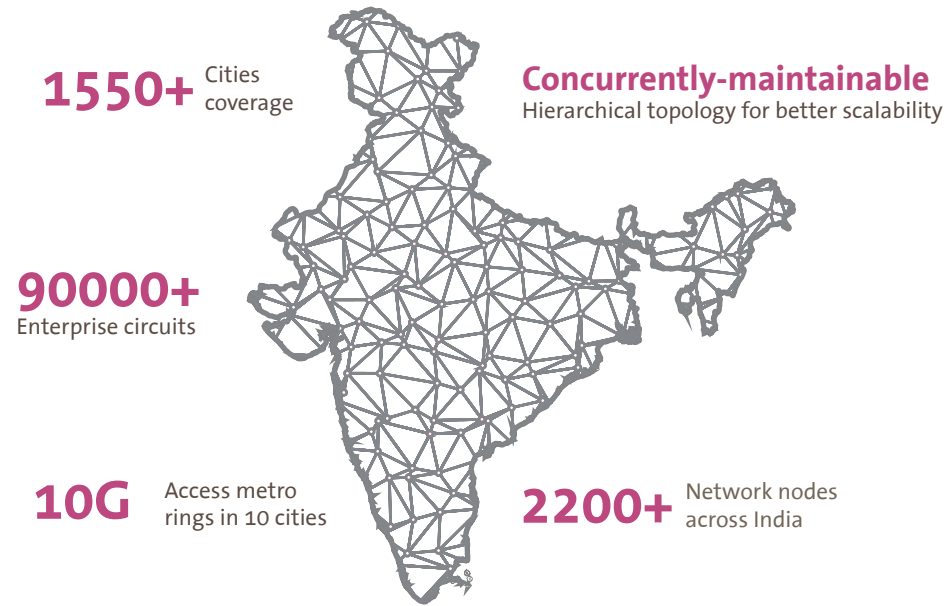
■ Existing ■ Upcoming ■ Cloud ready

Location	Existing in sq ft	Future in sq ft	Readiness
Mumba	120,000	250,000	June 18
Chennai	12,000	70,000	June 19
Hyderabad	—	30,000	Dec 18
Delhi	55,000	55,000	Available
Bangalore	16,000	50,00	Available

Total capacity of 455,000 sq. ft. of server farm

SIFY SERVICES

OUR NETWORK FOOTPRINT



SIFY SERVICES

OUR CLIENTS



SIFY SERVICES

OUR PARTNERS

Technology



Cloud & Acceleration



Application



Security



SIFY SERVICES

AWARDS AND ACCOLADES



Managed Network Solutions



Integrated Data Center Solutions



Sify is a Business Super Brand



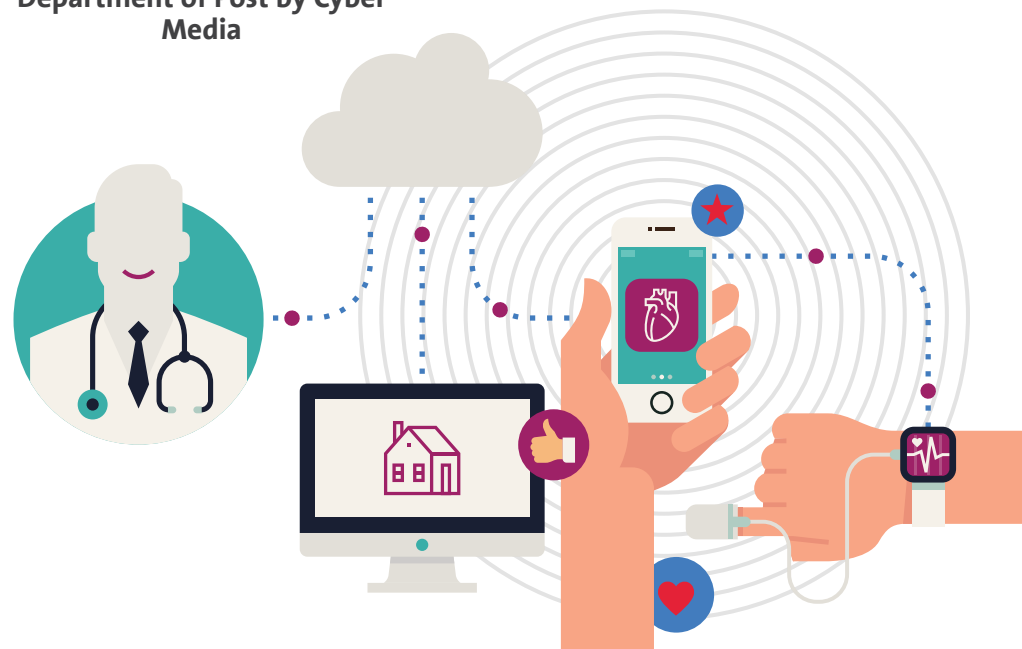
Most Promising Brand by WCRC



National Award for Best Technology for Social Case for Department of Post by Cyber Media



CIO Review recognized Sify in the Cloud Managed Service Vertical



SIFY SERVICES

Our end-to-end ICT solutions

- Data Center Transformation (Cloud) and Infrastructure services
- Network Transformation and Connectivity services
- Technology Integration services
- Application and Platform services
- Managed Security services
- Internet of Things

India - Headquarters

Sify Technologies Limited
II Floor, TIDEL Park, No.4,
Rajiv Gandhi Salai,
Taramani,
Chennai - 600 113
India

United States of America

Sify Technologies North America Corp.
5201 Great America Parkway, Suite 132
Santa Clara, California
95054, USA

Dubai

Sify Technologies Limited
P. O. Box 500522, Office no. 1717, Shatha Towers,
Dubai Media City, Dubai
The United Arab Emirates

United Kingdom

Sify Technologies Limited
63 St Mary Axe
EC3A 8AA, London
United Kingdom

Singapore

Sify Technologies (Singapore) PTE Limited
30 Cecil Street, #19-08
Prudential Tower
Singapore 049712

CONTACT US



+91 8750442233



marketing@sifycorp.com

www.sifytechnologies.com