PTC

HONOLULU, HI

Market Opportunity of Data Center in Nepal:

Suraj Singh Thapa

CHRO, Nepal Telecom

PACIFIC TELECOMMUNICATIONS COUNCIL

'25

CONTENTS

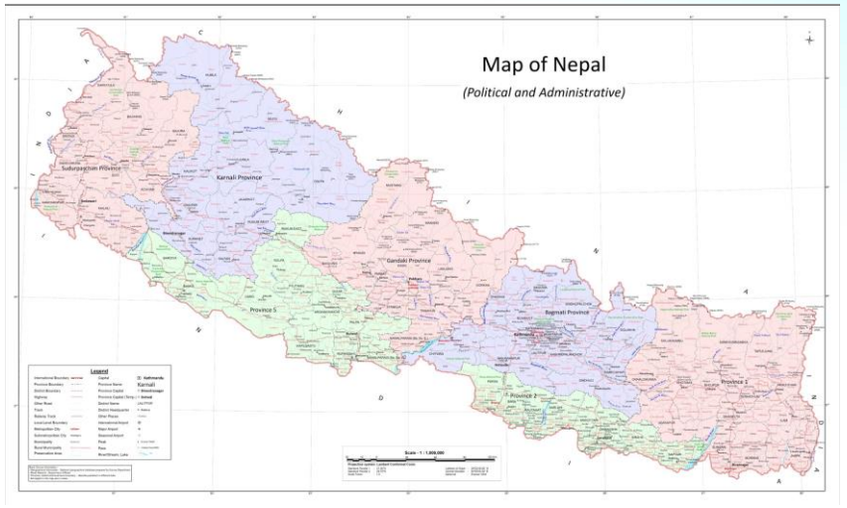
HONOLULU, HI

PACIFIC TELECOMMUNICATIONS COUNCIL

HONOLULU, HI

01. Nepal

Nepal, officially the Federal Democratic Republic of Nepal, is a landlocked South Asian country located mainly in the Himalayas, sharing borders with China and India.



Area

147,516 km2

Altitude

59 to 8838 m

Time Zone

GMT + 5:45

$ 41 Billion

Per Capita: $1352

Growth: 4 -5 %

GDP Contribution

Agriculture: 27%

Industry : 14%

Service: 59%

Population

3.1 M

180 / km2

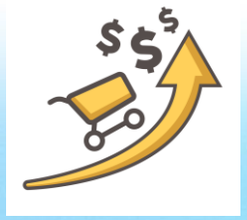
Currency

Nepali Rupee (NPR)

Nearest Port

Kolkata: 940km

Visakhapatnam: 1470km



Inflation

5 - 6 %

$250 million.

PACIFIC TELECOMMUNICATIONS COUNCIL

25

02. Data center market introduction

HONOLULU, HI

Overview

- The data center market in Nepal is becoming a crucial element of the country's digital infrastructure.
- As the digital economy expands, the demand for reliable data storage, processing, and management solutions is growing significantly.

Rising Internet Penetration:

- Significant growth in internet users, exceeding 80%.
- Increased engagement in e-commerce, online education, and digital services.

Demand for Cloud Services:

- Growing interest among businesses in cloud solutions.
- Potential for local cloud service providers to meet this demand.

Digital Economy Expansion:

- Increased internet penetration and usage, facilitating e-commerce, online education, and digital services.
- Growing reliance on technology across various sectors, including finance, healthcare, and government.
- Policies encouraging investment in technology and data centers.

PACIFIC TELECOMMUNICATIONS COUNCIL

f25

03. SWOT analysis of Data Center in Nepal

• Strength

Strategic Location

- Positioned as a potential data hub for South Asia, facilitating cross-border data services.

Abundant Renewable Energy

- Access to hydropower provides a sustainable and cost-effective energy source for data center operations.

Growing Digital Economy

- Increasing internet penetration and digital service adoption drive demand for data storage and processing.

Government Support

- Favorable policies and initiatives under the Digital Nepal Framework encourage investment in IT infrastructure.

• Weakness

Infrastructure Challenges

- Limited physical infrastructure (roads) can hinder efficient data center operations.

High Initial Costs

- Setting up data centers can involve significant capital investment.

Skilled Workforce Shortage

- Lack of trained professionals in data management and IT can impede growth and operational efficiency.

Power Reliability Issues

- While hydropower is abundant, power outages and fluctuations can pose challenges for uninterrupted service

03. SWOT analysis of Data Center in Nepal

• Opportunity

Sector-Specific Demand

- Growing needs in healthcare, finance, e-commerce, and education for secure data management solutions.

Rise of Cloud Services

- Increased interest in cloud solutions presents opportunities for local data centers to cater to businesses seeking reliable services.

Smart City Initiatives

- Government projects focused on urban development and smart cities can create additional demand for data services.

Regional Data Hub Potential

- Opportunity to attract foreign investments and become a data processing hub for neighboring countries.

• Threats

Competitive Market

- Growing competition from regional players and international companies may impact market share for local data centers.

Cybersecurity Risks

- Increasing cyber threats and data breaches pose significant risks to data center operations and client trust.

Regulatory Changes

- Evolving regulations related to data privacy and protection could impose additional compliance costs.

Economic Instability

- Political and economic uncertainties can affect investment flows and operational stability in the sector.

Investment environment and opportunities in Nepal

Why Nepal?

- **Strategic Location**:
  - Positioned between two major markets, India and China.
- **Growing Digital Demand**:
  - Increasing internet penetration and government focus on digitization.
- **Energy Potential**:
  - Nepal's vast hydropower resources offer a sustainable energy source for data centers, reducing operational costs.
- **Policy Incentives**:
  - The government has been promoting IT infrastructure and FDI-friendly policies.
- **Geopolitical Importance**:
  - A neutral ground for regional data storage and processing.

Market Potential

- Expansion of cloud computing, e-commerce, and fintech industries.
- Regional demand for disaster recovery and backup facilities.
- Potential for Nepal to become a regional hub for South Asia

Capital Sources

Local Capital

- **Private Investors**:
  - Prominent local businesses.
- **Government Funding**:
  - Potential grants or subsidies for projects aligned with national IT strategies.

International Financial Institutions

- **IMF (International Monetary Fund)**:
  - Could provide macroeconomic support or advise on fiscal policies favoring IT investments.
- **ADB (Asian Development Bank)**
  - : Likely to invest in infrastructure projects, including green energy-powered data centers.

Commercial Banks

- Local banks may provide project financing with government backing.
- International banks could fund as part of their corporate or green investment portfolios.

FDI (Foreign Direct Investment)

- **Technology Firms**: Companies like Amazon, Google, or Microsoft could partner to establish data centers.
- **Venture Capital**: Interested in startups focusing on data and cloud solutions in emerging markets.

Telecom Infrastructure

Establishing a data center in Nepal necessitates a robust and reliable telecommunication infrastructure, encompassing optical and broadband links.

- **Optical Fiber Network**:
  - Nepal's major telecom operators, including Nepal Telecom and Ncell, have developed extensive east-west optical fiber networks, facilitating high-speed data services across the country.

- **Broadband Services**:
  - Over 20 Internet Service Providers (ISPs) in Nepal offer broadband services, with more than 2 million customers connected via optical fiber internet. This widespread broadband penetration supports the data demands of both consumers and businesses.

Nepal Telecom

Nepal Telecom (NT), the largest telecommunications service provider in Nepal, has a well-established infrastructure that can potentially support data centers.

•Fiber Optic Network:

- Extensive fiber optic backbone that spans across the country.
- Cross border (Nepal - India), (Nepal China) - High Bandwidth Optical Fiber Connectivity.
- Connected to international submarine cables through India, providing global reach for data services.

•Telecommunication Towers:

- Operates numerous telecom towers across urban and rural areas, ensuring robust connectivity.
- Towers could potentially support edge computing infrastructure for localized data processing.

•Earth Stations and Satellite Connectivity:

- Operates earth stations that provide satellite connectivity, ensuring communication in remote areas where fiber infrastructure may not be available.

- **Human Resource:**
  - Employees are highly skilled in telecommunications, adaptable to technological advancements, and committed to ensuring nationwide connectivity.
  - Customer-centric approach drive the company's success and national development.

05. Different Data centers in Nepal - Market situation

Notable Data Centers

- **Nepal Telecom - Under Construction -** Kathmandu, Bhairahawaha
- **Nepal Data Center (NDC) -** Kathmandu, Services: Colocation, cloud computing, disaster recovery
- **WorldLink Data Center -** Kathmandu, Services: Dedicated servers, cloud solutions, managed services
- **Subisu Data Center -** Kathmandu, Services: Cloud services, colocation, internet connectivity
- **Himalayan Data Center -** Kathmandu, Services: High-security colocation, disaster recovery, IT infrastructure
- **Mercantile Data Center -** Kathmandu, Services: Cloud services, hosting solutions, dedicated servers
- **CyberNet Data Center -** Kathmandu, Services: Managed hosting, cloud computing, colocation
- **Vianet Data Center -** Kathmandu, Services: Cloud solutions, web hosting, dedicated servers
- **NCell -** Kathmandu, Services: Telecom services, Cloud solutions, web hosting, dedicated servers
- **Nepal Electricity Authority, Data Center -** Kathmandu, Services: Self data

06. Big data market opportunities for Mega project investor

- **Banking and Finance**
  - **Regulatory Compliance**: Secure environments for sensitive financial data.
  - **Fraud Detection**: Real-time analytics for transaction monitoring.
  - **Digital Banking Infrastructure**: Reliable solutions for online financial services.

- **E-commerce**
  - **Scalability**: Infrastructure to handle traffic surges during peak seasons.
  - **Customer Insights**: Data analytics to optimize marketing and inventory.
  - **Secure Payment Processing**: Essential for safe online transactions.

- **Telecommunications**
  - **Data Management**: Supports storage for customer data, customer requirement.
  - **Network Optimization**: Enhances management of telecom infrastructures.
  - **IoT Data Solutions**: Facilitates the processing of data from connected devices

- **Government and Public Sector**
  - **E-Governance**: Infrastructure for secure citizen data management.
  - **Disaster Recovery**: Essential backup solutions for critical applications.
  - **Smart City Support**: Data centers aid in urban planning and public services.

THANK YOU

HONOLULU, HI

'25

PACIFIC
TELECOMMUNICATIONS
COUNCIL