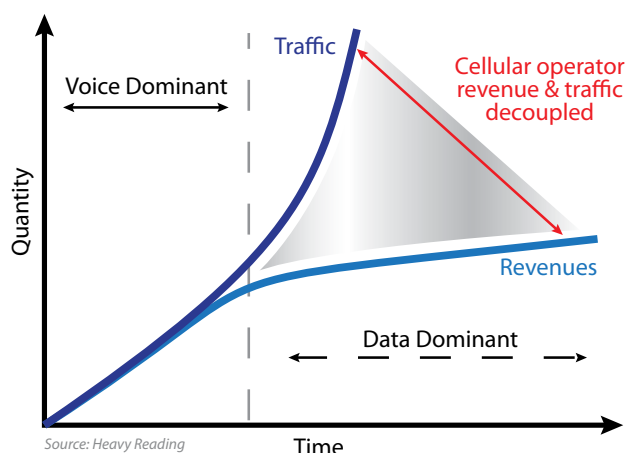


FUJITSU MOBILE BACKHAUL SOLUTIONS

Mobile data traffic is exploding due to escalating demand for wireless connectivity. At the same time, the consumer trend of “a better experience at a bigger bargain” is severely eroding average revenue per user for wireless service providers. These providers are seeking ways to improve profitability, and can realize large savings by outsourcing their backhaul networks.

This situation amounts to an excellent opportunity for MSOs to profit by providing wireless operators with essential backhaul services at compelling price points. With huge investments in optical fiber plant, MSOs already reach into the heart of metropolitan and suburban residential areas, where the majority of mobile traffic originates.



Escalating traffic, stagnating revenues

Services-Based Multivendor Approach

Fujitsu has the resources, expertise and technology needed to build and operate large-scale next-generation backhaul networks. Fujitsu uses a professional services-based approach. Fujitsu has business analysts, network architects, master network integration specialists, program managers, and a full-service network operation center to deploy or modernize state-of-the-art backhaul networks. This approach must be based on a thorough understanding of the wireless provider’s critical business needs, such as SLA support and last-mile connectivity.

Key Business Advantages

By leveraging their existing infrastructure MSOs can capitalize on three key business advantages:

- ▶ MSO infrastructure is often in close proximity to key cell tower locations
- ▶ Because MSOs often use Ethernet as a transport medium, they can offer equivalent T1 service to mobile operators at a significant discount over what the LECs charge
- ▶ Bandwidth can be sold in increments of 1 Mb that can be provisioned remotely with no truck roll needed

Master Network Integration Services

Fujitsu Master Network Integration Services are designed to ensure that network elements are deployed and integrated for optimal performance and efficiency. We deliver the same high level of commitment, expertise and results regardless of whether the network elements are Fujitsu or those of another vendor.

Building a Backhaul Revenue Engine

Capitalizing on existing fiber plant by building a backhaul business is no small undertaking. Strict requirements demand close attention to network architecture and technology, right up to the last mile. Fujitsu offers full turnkey backhaul solutions and the broad span of expertise needed to take your backhaul network from project plan to profit. We take a vendor-and product-neutral approach, providing services, support and equipment solutions that are engineered to your specific situation.

Backhaul cost comparisons

10 Mbps or Equivalent to 500 Sites	Backhaul Cost per Month: One Site	Backhaul Cost per Month: 500 Sites	Backhaul Cost per Year: 500 Sites
7 T1s @ \$300 per month per T1	\$2,100	\$1,050,000	\$12,600,000
Ethernet @ \$75 per month per Mb	\$750	\$375,000	\$4,500,000
Ethernet @ \$40 per month per Mb	\$400	\$200,000	\$2,400,000

SPECIALIST BACKHAUL EXPERTISE

Technical Expertise to Support Stringent Requirements

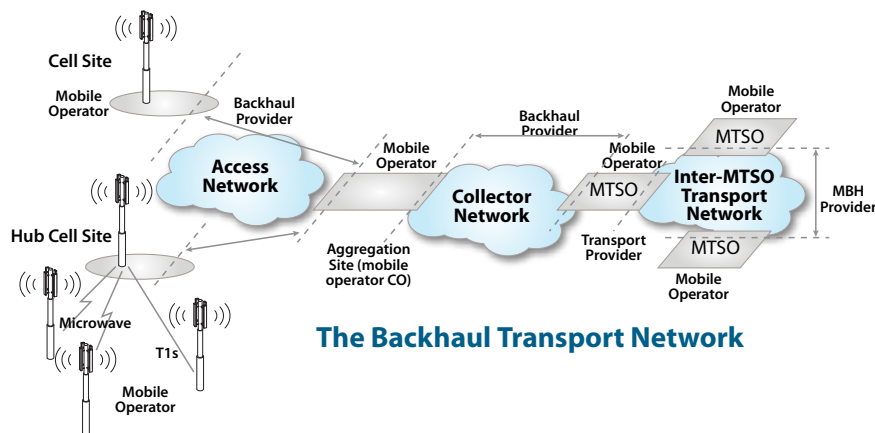
As you work through the challenges and choices of developing your backhaul business offering, technology selection is crucial. Fujitsu has the right expertise to prepare your network for the stringent service-level requirements of wireless providers. We take every aspect into account and we collaborate with you to identify and deploy the best solutions. Our expert technicians will guide you through complex issues such as:

- ▶ Wireless-specific architecture requirements
 - Multitenant cell sites
 - Coexisting legacy and new technologies
 - Transparent implementation to support:
 - TDM-based services (GSM and CDMA)
 - ATM/IMA (UMTS)
 - Native IP/Ethernet-based technologies
 - WiMAX and LTE
- ▶ Wireless carrier SLAs
 - 20–100 Mbps Committed Information Rate (CIR) for bandwidth scalability
 - 50–500 Mbps Excess Information Rate (EIR) for burst capability
 - Less than 3–5 ms latency (one-way)
 - Less than 1–3 ms jitter (one-way)
 - Up to eight unique Classes of Service (CoS)
 - Sub-50 ms Ethernet Virtual Circuit (EVC) recovery time
 - 99.99–99.999% network availability
- ▶ Timing and synchronization – CDMA base stations require timing alignment to within 3 ms, and packet-based timing standards such as IEEE 1588v2 are still vulnerable to packet network impairments
- ▶ Network monitoring – Strict monitoring is essential for full SLA compliance and speedy fault resolution. The Fujitsu NETSMART® 1500 Management System delivers powerful monitoring features for heterogeneous networks



End-to-End Solution

Mobile Backhaul Project Cycle



The Backhaul Transport Network

Leading Hardware Platforms

Fujitsu is an innovator in Connection-Oriented Ethernet and optical transport technologies. The Fujitsu FLASHWAVE® product portfolio includes systems such as the FLASHWAVE 4100 ES Micro Packet Optical Networking Platform (Packet ONP), supporting TDM and native Ethernet services; the FLASHWAVE CDS Packet ONP, which is a native Ethernet solution with support for 1 Gbps up to 10 Gbps; and the FLASHWAVE 9500 Packet ONP, which is a full fiber aggregation solution. Fujitsu also offers the FLASHWAVE 9420 Ethernet Access Platform, which supports GbE at a cell tower.

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Configuration requirements for certain uses are described in the product documentation.
Features and specifications subject to change without notice.

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