IP/Ethernet in Mobile Backhaul Networks: Global Service Provider Survey

August 7, 2009

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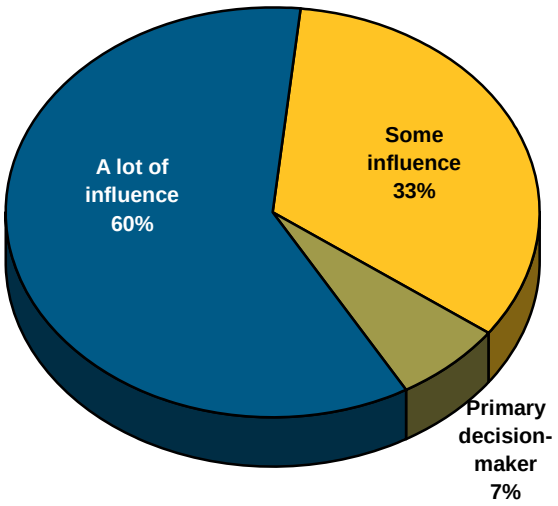
METHODOLOGY: RESPONDENT DEMOGRAPHICS AND INFLUENCE

Our respondents influence the purchase decision for mobile backhaul network equipment in mobile operators and backhaul transport providers that command 33% of the world's telecom capex and 28% of telecom revenue.

In June and July 2009, we surveyed 12 major operators about their use of IP/Ethernet in mobile backhaul networks. To qualify, respondents had to have detailed knowledge of their organization's mobile backhaul networks, and have some influence on the purchase decision for them. In three cases, the operators were cleanly divided into separate backhaul transport and mobile operations (as are many), and we interviewed people from each part and analyzed the two parts separately. Hence the 12 organizations are counted as 15 entities in the charts and statistics.

The majority of respondents (67%) are the primary decision maker or have a lot of influence in the purchase of backhaul equipment at their companies.

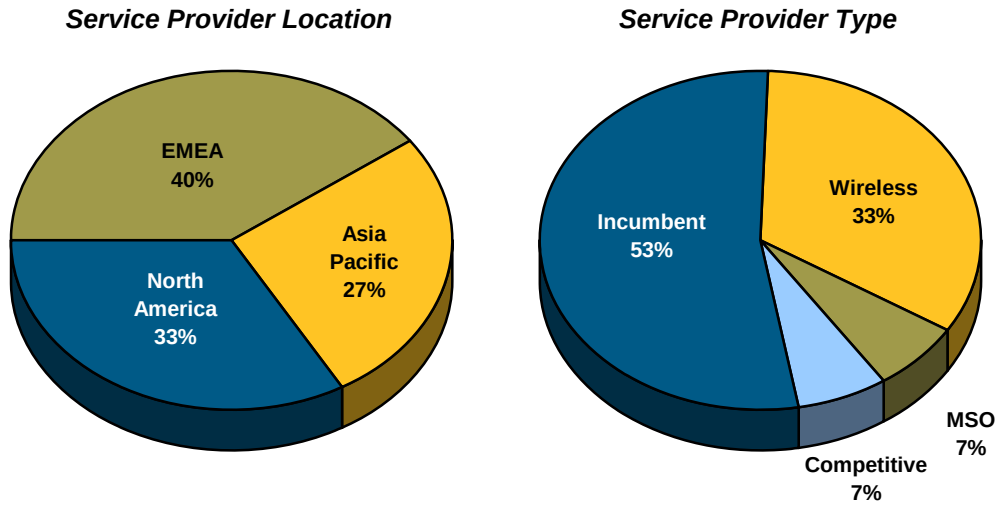
Exhibit 2 Respondents Influence Mobile Backhaul Equipment Purchases n=15



Respondent companies divide almost equally among EMEA, North America, and Asia Pacific. The majority are incumbents, and a third are wireless carriers.

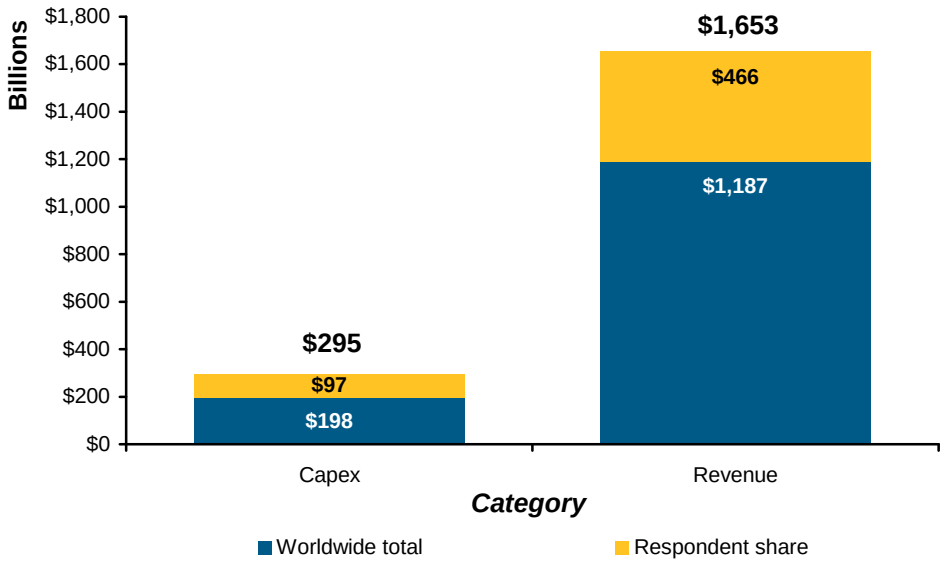
Exhibit 3

Respondents Represent a Mix of Geographies and Service Provider Types n=15



With 28% of worldwide carrier revenue, respondent organizations contribute 33% of worldwide capital expenditures.

Exhibit 4 **Respondents Represent a Significant Portion of WW Capex and Revenue n=15**



Service Provider Capex, Opex, ARPU, and Subscribers
By Provider Actuals and Short-term Forecast: Capex, Opex, ARPU, and Subscribers, Worldwide 7/10/09

We asked respondents which mobile services their organizations offer: WiMAX, cell site backhaul, cellular voice, or cellular mobile broadband, such as GPRS/EDGE, EV-DO, or HSPA/HSPA+. Most incumbents offer mobile voice and data services, and, since they typically own fiber/copper infrastructure, they usually offer cell site backhaul transport services to other mobile operators as well as to their own mobile operations.

All the mobile operators offer cellular voice and mobile broadband; the 20% not offering are the 3 respondents representing the backhaul transport operations of the vertically integrated providers.

Two respondents offer WiMAX services, which is Ethernet-based and high-bandwidth from the start, with services typically in the 3–8M range. Because WiMAX networks are greenfield deployments (even though some also use existing mobile cell sites), they almost entirely use microwave for backhaul and are at the forefront of the trend for Ethernet-only backhaul, having no legacy circuit-based voice to require TDM backhaul support.

Exhibit 5 **Mobile, Data, and Backhaul Transport Services Offered n=15**