

October, 2010: Trans-Atlantic Bandwidth Review

Trans-Atlantic Bandwidth Review

The trans-Atlantic submarine cable route features some of the lowest unit prices in the world. By Q3 2010, the median price for 10 Gbps wavelengths on the core London–New York link was \$14,250 per month. That price translates to just over \$2.51 per kilometer—a small percent of even the most competitively priced 10 Gbps wavelength routes in Europe and the U.S. In 2010, the lowest prices on offer for 10 Gbps London-New York wavelengths dipped to \$9,000. Despite low prices, the pace of price erosion has been modest compared with other competitive routes. Trans-Atlantic 10 Gbps wavelength price declined just 5 percent between Q3 2009 and Q3 2010.

Supply Developments

The current price of trans-Atlantic capacity reflects the incremental cost of adding additional wavelengths to existing systems and is disconnected from initial construction costs. This poses a challenge, because while these systems will continue to be upgraded to extend their potential capacity, demand forecasts indicate that surplus capacity will be depleted by 2016. New systems will be required soon, and the business case for these systems will have to factor in a contribution towards recovery of the initial capital outlay. To solve this conundrum, systems will either be sufficiently novel to justify a price premium (e.g. offer physical diversity, a unique landing station, or lowest latency) or will incorporate technology that delivers a cost per Mbps, even considering construction costs, on par with existing systems.

For example, South African company eFive Telecommunications has announced plans to construct a submarine cable system linking West Africa with South America, the first cable to link South America and Africa directly since Atlantis-2. This would introduce new supply into the market, while maintaining a service differentiable from cables linking Europe with North America directly.

Another strategy seeks an even more direct link between Europe and North America to achieve the lowest trans-Atlantic latency. Hibernia Atlantic plans to construct a cable with a straighter path than other undersea cables across the Atlantic, shaving 5 milliseconds or more off of the return-path latency between New York and London, to below 60 ms. With enough buyers willing to pay sufficient premiums, the project could go forward with both a viable business model and potentially add substantial capacity to the trans-Atlantic route.

The effect of these new projects on trans-Atlantic market pricing depends on the appetite for novel landings and low latency. The boom in African cable connectivity supports the case for geographical diverse routing option to the Western Hemisphere, and South America remains a high-potential region for growth with modest competition relative to North America. Unless exceptional demand emerges for a direct link between South America and Africa, pricing on this route will have no impact on that of trans-Atlantic alternatives.

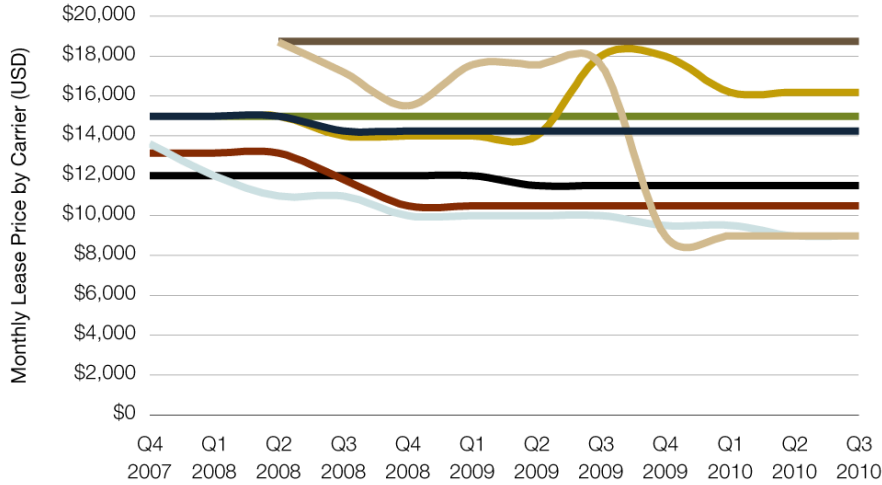
Demand for low latency from high-frequency trading firms has produced exceptional price premiums for capacity, including the trans-Atlantic route. But high-frequency trading firms consume a modest amount of capacity and comprise a very small market segment in terms of total capacity consumed. Although demand for low latency extends beyond high-frequency trading firms, willingness to pay extraordinary price premiums to secure the absolute lowest latency path drops considerably outside of a small group of firms.

If Hibernia's Project Express garners sufficient revenue from latency-sensitive customers, and those customers consume sufficient capacity, the system may not offer much supply to the overall trans-Atlantic market. But if the latency customers only consume a modest amount of the system's capacity, Hibernia could have substantial capacity available for buyers that are less latency sensitive, and only willing to pay prices that are competitive with alternatives. In either scenario, Hibernia would capture a major share of premium trans-Atlantic pricing, but may not otherwise have a dramatic impact on the bulk of trans-Atlantic capacity pricing. If regulatory or other structural changes wipe out demand for the lowest latency from high-frequency traders, latency becomes a less extraordinary decision factor among others for trans-Atlantic capacity, such as diversity of paths, landing stations, backhaul options, and subsequent terrestrial connectivity.

Price Trends

The median London–New York trans-Atlantic 10 Gbps wavelength price decreased 5 percent between Q3 2009 and Q3 2010 (see Figure: London–New York 10 Gbps Wavelength Prices by Carrier, Q3 2009–Q3 2010). One carrier dropped price from the high end of the range to create a new low. Prices for 10 Gbps wavelengths on the London–New York route ranged from a low of \$9,000 to more than \$18,000 per month. Several factors explain the range, including varying regional strengths and customer segments served among carriers. For instance, some carriers may offer more competitive prices in other regions that offset a high price on the trans-Atlantic route and result in competitively-priced global capacity bids. Other carriers may serve disproportionately more high-volume buyers that command the lowest prices.

FIGURE 1
London–New York 10 Gbps Wavelength Prices by Carrier, Q3 2009–Q3 2010



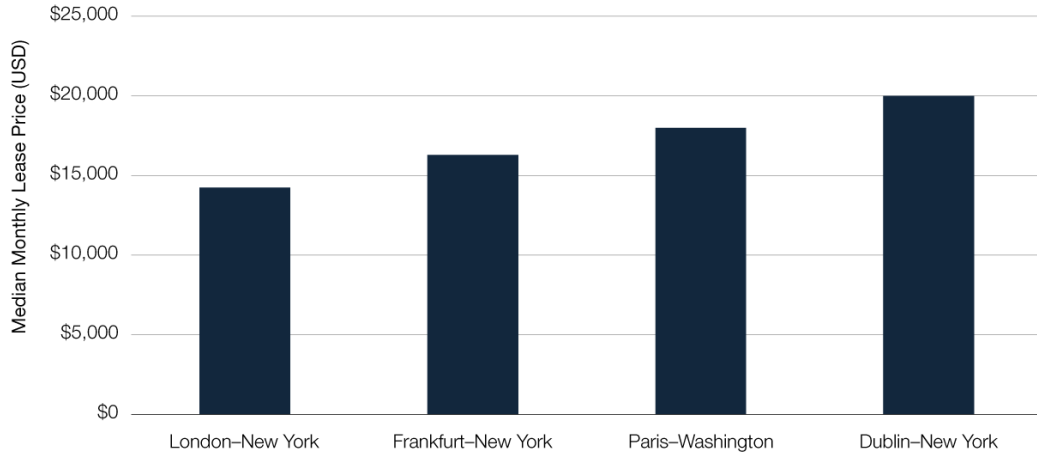
Notes: Each line represent price quotes from an individual carrier for a 10 Gbps unprotected wavelength. Prices are in U.S. dollars and exclude local access and installation fees.

Source: TeleGeography

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London–New York has long been the core route for trans-Atlantic traffic, with the largest number of competitors and lowest capacity prices. Prices of circuits between New York and other major cities in continental western Europe are slightly higher (see Figure: Trans-Atlantic Median 10 Gbps Prices on Selected Routes, Q3 2010). The differences in trans-Atlantic pricing may reflect a premium operators can charge for physically diverse submarine cable routing or simply the cost of extra backhaul required to reach each destination. While 10 Gbps prices to other trans-Atlantic routes such as Frankfurt–New York and Amsterdam–New York declined 10 percent between Q3 2009 and Q3 2010, they remain more expensive than London–New York. The more novel Dublin–New York route’s median monthly 10 Gbps wavelength lease price was \$20,000 in Q3 2010.

FIGURE 2
Trans-Atlantic Median 10 Gbps Prices on Selected Routes, Q3 2010



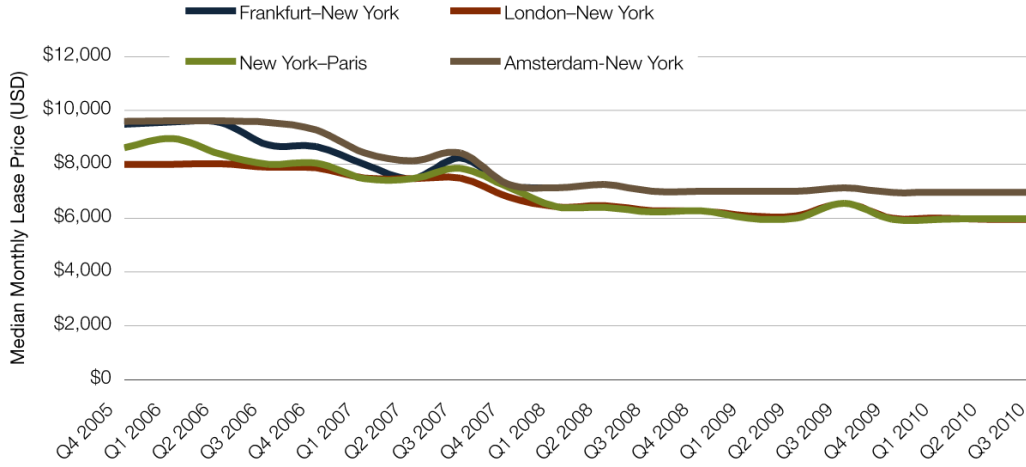
Notes: Each column represents the median price for an unprotected 10 Gbps wavelength on the listed route. Prices are in U.S. dollars and exclude local access and installation fees.

Source: TeleGeography

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Aggregate trans-Atlantic SDH prices have trended downward slowly. The median London-New York STM-1/OC-3 price declined 6 percent to \$2,961 per month in 2010. Most carriers have adjusted prices within a \$2,000 to \$4,000 range over the past several years, although a new low of \$1,080 was established in 2010. For STM-4 circuits, the median London-New York price dropped 7 percent, compounded annually, since 2006 to \$5,950 in Q3 2010, owing mostly to price pressure in late 2007 and several carrier adjustments in 2009 (see Figure: Trans-Atlantic Median STM-4 Prices, Q1 2006-Q3 2010). The lowest STM-4 price is now \$3,200 per month.

FIGURE 3
Trans-Atlantic Median STM-4 Prices, Q4 2005–Q3 2010



Notes: Each line represents the median monthly lease price for a protected STM-4 (622 Mbps) circuit. Prices are in U.S. dollars and exclude installation fees and local access.

Source: TeleGeography

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FIGURE 4
Trans-Atlantic STM-4/OC-12 Median Monthly Prices, Q3 2008–Q3 2010

Route	Q3 2008	Q3 2009	Q3 2010	Change Q3/08–Q3/09	Change Q3/09–Q3/10	Km	\$/Km
Amsterdam-New York	\$7,000	\$7,130	\$6,950	2%	-3%	5,860	\$1.19
Frankfurt–New York	\$7,000	\$7,130	\$6,950	2%	-3%	6,464	\$1.08
London–New York	\$6,317	\$6,554	\$5,950	4%	-9%	5,572	\$1.07
New York–Paris	\$6,277	\$6,554	\$5,975	4%	-9%	5,838	\$1.02

Notes: Prices represent median STM-4/OC-12 (622 Mbps) monthly lease prices excluding local access and installation fees. Price/km is derived from Q3 2010 data. All prices are in U.S. dollars.

Source: TeleGeography Research

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Outlook

Prices for trans-Atlantic capacity have not dropped dramatically in recent years and this trend is likely to continue. Prices in some cases are at a level only modestly above the incremental cost of provisioning the capacity, so any near term price reductions will only be justified if and when equipment costs decline.

Beyond upgrading existing systems, trans-Atlantic bandwidth demand will eventually require new cables. The current price of trans-Atlantic capacity makes a challenging business

case to build a new system, but real and immediate demand for low latency and physical diversity from a small segment of customers willing to pay a premium may help justify new construction sooner rather than later.

Once the appetite for novel connectivity is satiated, the rest of the capacity will be subsumed into the overall demand for trans-Atlantic links, and prices will reflect that. It appears unlikely that capacity prices overall will rise. In addition to the propositions of recently announced private cables, a likely scenario is for a consortium cable to build to suit internal needs to support products that have higher profit margins on capacity costs than wholesale capacity sales.

Noting that any new construction is still years out, the short term pricing outlook is for more of the same. In the medium term, there is potential for short-term volatility, but since the new capacity will be needed, the introduction of new supply will not result in the kind of price pressure seen in other situations where new cables were launched.

Price Watch

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TeleGeography's *Bandwidth Price Watch* service allows market participants to track recent pricing developments at a glance. Price Watch tracks pricing changes on nine key routes worldwide. Because pricing in some regions, particularly on terrestrial routes, is distance-sensitive, prices are stated both in absolute terms and in dollars per Mbps per mile.

Price Watch information is drawn from TeleGeography's *Bandwidth Pricing Database Service*. The online database provides access to capacity prices on more than 125 separate routes and capacities between 2 Mbps and 10 Gbps. Monthly lease figures are an average of the median price over the previous three months.

FIGURE 5
September 2009 (USD)

Route	E-1	STM-1 /OC-3	STM-16 /OC-48	E-1	STM-1 /OC-3	STM-16 /OC-48
Intra-European Routes						
London – Paris	\$245	\$1,900		\$ 0.575	\$ 0.058	
London – Frankfurt	\$245	\$1,900		\$ 0.311	\$ 0.031	
London – Milan	\$315	\$2,600		\$ 0.264	\$ 0.028	
London – Madrid	\$320	\$2,700		\$ 0.204	\$ 0.022	
Trans Oceanic Routes						
London – New York	\$325	\$2,500		\$ 0.047	\$ 0.005	
Los Angeles – Tokyo	\$875	\$8,500		\$ 0.080	\$ 0.010	
Trans American Routes						
New York – Los Angeles		\$4,350	\$30,000		\$ 0.011	\$ 0.005
Los Angeles – San Francisco		\$1,250	\$11,000		\$ 0.023	\$ 0.013
New York – Washington		\$1,250	\$11,000		\$ 0.040	\$ 0.022

Source: TeleGeography Research

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FIGURE 6
September 2010 (USD)

Route	E-1	STM-1 /OC-3	STM-16 /OC-48	E-1	STM-1 /OC-3	STM-16 /OC-48
Intra-European Routes						
London – Paris	\$210	\$1,400		\$ 0.493	\$ 0.042	
London – Frankfurt	\$210	\$1,500		\$ 0.266	\$ 0.025	
London – Milan	\$285	\$2,200		\$ 0.239	\$ 0.024	
London – Madrid	\$290	\$2,300		\$ 0.185	\$ 0.019	
Trans Oceanic Routes						
London – New York	\$250	\$2,000		\$ 0.036	\$ 0.004	
Los Angeles – Tokyo	\$750	\$7,250		\$ 0.068	\$ 0.009	
Trans American Routes						
New York – Los Angeles		\$3,500	\$25,500		\$ 0.009	\$ 0.004
Los Angeles – San Francisco		\$1,050	\$8,500		\$ 0.020	\$ 0.010
New York – Washington		\$1,150	\$9,000		\$ 0.036	\$ 0.018

Source: TeleGeography Research

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