

Quantitative Impact of AdvancedTCA On Telecom Economics

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Many observers have described the prospective savings from deploying AdvancedTCA versus proprietary switching equipment, but few have offered quantitative results. We decided to address this shortcoming by analyzing two switching configurations (8x1GbE + 1x10GbE low end; 96xGbE + 12x10GbE high end). For each configuration, we compared current costs and street prices for the industry leader (with proprietary equipment) versus AdvancedTCA equivalents.

Industry Leader Economics

For the industry leader, we obtained street prices from eBay, and calculated costs by applying the company's 69% corporate gross margin. Table 1 shows the estimates.

Table 1. Current Industry Leader's Switching Prices and Costs

	8xGbE + 1x10GbE (Low End)	96xGbE + 12x10GbE (High End)
Street Price	\$14,320	\$141,600
Cost	\$4,439	\$43,896
Gross Margin	\$9,881	\$97,704
% GM	69.0%	69.0%

AdvancedTCA Economics

For AdvancedTCA, we configured the lower end switch using a minimal MicroTCA configuration with two AdvancedMCs, one with an 8x1GbE I/O card, the other with a 10GbE CX4. We configured the high-end switch with an AdvancedTCA chassis including 12 carrier cards holding 12 AdvancedMCs (six 16x1GE I/O cards, and six 2x10GbE CX4 I/O cards). The chassis includes two shelf managers and two hub non-blocking switch blades for redundancy. We assumed that AdvancedMCs, carrier cards, VCMs, and shelf managers would

be using full ASICs produced in volume.

Since the AdvancedTCA cards would be open standard designs, we assumed gross margins at the 42% currently enjoyed by major telco equipment providers, rather than the 65-70% values of enterprise equipment manufacturers such as Cisco Systems, Juniper Networks, and Foundry Networks.

Table 2 shows the results for the AdvancedTCA configurations.

Table 2. AdvancedTCA Configuration Prices and Costs

	Low	High
Street Price	\$1,821	\$46,029
Cost	\$1,056	\$26,697
Gross Margin	\$765	\$19,332
% GM	42.0%	42.0%

Comparative Economics

Table 3 shows AdvancedTCA versus industry leader costs and prices. The results indicate that AdvancedTCA unit costs and prices for redundant non-blocking switches and 3-5 nines availability are much lower than the industry leader's.

Table 3. Ratio of AdvancedTCA versus Current Industry Leader Per-Unit Economics

	Delta: Low	Delta: High (ATCA)
Street Price	-\$12,499	-\$95,571
Cost	-\$3,383	-\$17,199
Gross Margin	-\$9,116	-\$78,372
	Ratio: Low	Ratio: High (ATCA)
Street Price	12.7%	32.5%
Cost	23.8%	60.8%
Gross Margin	7.7%	19.8%

Conclusion

Our calculations suggest the huge potential of AdvancedTCA to transform the

networking industry. The comparison is not entirely apples-to-apples, in that the IPMI (intelligent platform management interface) software used to manage AdvancedTCA equipment is less capable than Cisco's IOS or Juniper's JUNOS. However, the differences will surely lessen with time at very little increase in price. As a result, in the long term, we expect the telecom industry will look much like the computing industry, albeit with higher service, support, and availability requirements.

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