Fiber Optic Services And Products

PART 1: WIRELESS POSES SEVERE CHALLENGE TO FTTD

EXECUTIVE SUMMARY

Wireless appears to pose a significant threat to the fiber to the desk industry. Predictions are of wireless capabilities becoming embedded in computing equipment. With such embedding, the additional cost factors of fiber products may be sufficiently high to put fiber to the desk at a cost disadvantage. With such a disadvantage, the future of fiber to the desk (FTTD) may be severely limited. A detailed understanding of the relative advantages and disadvantages of fiber and wireless is essential to future success. In section two, we propose development of a detailed qualitative and quantitative understanding.

INTRODUCTION

Jeff Caruso of Network World issued the article presented below. It bodes ill for fiber to the desk.

Focus for today: Growth expected for switches, wireless LANs

By Jeff Caruso, NW on High-Speed LANs email newsletter, 1/30/04

The Ethernet switch market will return to strong growth in 2004,

and the wireless LAN market will continue its run, according to

a series of five-year forecast reports recently released by

Dell Oro Group.

The projections for Ethernet switches show slow but steady

growth - in the single digits - through 2008, starting with 7%

in 2004. Reasons include an improving economy, as companies look

for inexpensive products that enable new applications, Dell Oro

says. Switch vendors are starting to include more features in

their products without raising the prices, so users get more for

their money and can use those features to improve their networks

and add VoIP.

Meanwhile, the WLAN market is set to grow 23% this year, to $2.2

billion. Dell Oro says growth should also be good next year -

but afterwards, **growth should slow substantially, come to a halt**

and start declining in 2007.

Interestingly, Dell Oro bases this reasoning on a prediction

that WLAN functionality will become embedded in other products.

Cable modems and DSL equipment will have WLAN features, so users

will not have to buy separate wireless gear. Plus, WLAN support is

becoming standard equipment on notebook computers, so people

will not be buying as many separate WLAN cards for them.

Also, Dell Oro says the worldwide router market will grow 6% a

year, on average, over the next five years - from $6.3 billion

in 2003 to $8.6 billion in 2008. The research firm says the last six months were a turning point for the market, which had been declining for several years.

OBSERVATIONS

If the predictions indicated in red come true, then the demand for FTTD will diminish, as equipment will come equipped with wireless capability. With such capability, the cost analysis will move against FTTD.

This potential for reduced demand for fiber products requires a detailed understanding by fiber product manufacturers. This understanding is of the relative advantages, both qualitative and quantitative, of fiber vs. wireless. I offer a solution in part two of this newsletter.

CONCLUSION

The FOLS and the fiber industry need to understand the reality of the wireless threat to FTTD. Without such a realistic understanding, the FOLS and the fiber industry will be unable to focus a successful counter attack.

PART 2: HOW CAN FTTD CHALLENGE WIRELESS?

EXECUTIVE SUMMARY

Wireless appears poised to create a severe challenge to FTTD. Pearson Technologies proposes to create a technical and cost comparison to provide an unbiased, realistic view of the relative merits of both technologies. This comparison will include identification of scenarios in which FTTD can be favored. With this view, fiber product manufacturers can create strategies for focusing resources on those opportunities that favor fiber. Such a focus will increase profits.

OBSERVATIONS

The challenge presented by wireless needs a detailed understanding of both the qualitative and quantitative factors of wireless and FTTD. For instance, wireless offers mobility. Yet this mobility comes at a price. What is the true price of wireless? Is the true price partially hidden? Would a UTP enabled computer be less expensive than a wireless enabled computer?

Numerous trade journal articles indicate the need for a thorough site survey in order to implement a successful wireless network. What is the cost, direct or hidden, of such a survey?

Wireless is a hub-based system, not a switch-based system. With such a system, what is the effective throughput and at what number of users per hub and bandwidth requirement per user will the wireless network fail to meet its needs? Recent articles indicate significant reduction in throughput when the hub supports a large number of users. If more hubs are required to avoid low throughput, then the true cost of the wireless network may be higher than anticipated. How high can this cost be?

What is the cost of upgrading a wireless network? Such upgrade costs can be of the hubs and the individual nodes/PCs. If a computer is wireless enabled and needs an upgrade, what will be the cost of such a card? Are notebooks and computers with wireless capabilities upgradeable?

What is the true state of the security issue? What is the cost impact of maintaining a secure wireless network? What is the throughput cost (reduction) of maintaining a secure wireless network?

What hidden cost or performance factors are there is the wireless network? What is the true cost of wireless?

What upgrades are in store for the future? What standards activities support such future upgrades? What is the anticipated time of availability of such upgrades? What is the cost comparison of upgrading a FTTD network and a wireless network?

A PROPOSED SOLUTION

The FTTD-wireless comparison poses a large number of questions. These questions require an organized and thorough analysis to sort the major factors from the minor factors. In addition, the fiber industry needs an apple-to-apple cost comparison of FTTD and wireless networks meeting the same requirements. We note the total lack of cost information in articles touting the advantages of wireless. With both qualitative and quantitative answers to these questions, the fiber industry can formulate a strategy to identify those situations, or scenarios, in which fiber to the desk is a better solution than is wireless. With identification of such scenarios, the fiber industry can focus its limited resources on those customers and applications that favor the fiber solution.

Pearson Technologies presents the following proposal to meet these needs. Pearson Technologies proposes to undertake a wireless network-fiber network comparison study. In this study, we propose to identify the five[1] major factors that favor wireless. We will compare these factors to the factors that favor fiber to the desk.

We will identify the scenarios in which these major factors may result in choice of wireless over FTTD. We will identify strategies that can lead to fiber becoming the favored choice.

We will create a number of scenarios we believe to represent most potential users of wireless LANs. For each of these scenarios, we will create a cost comparison. From these cost comparisons, we will develop scenario definitions, within which FTTD will be more favored than wireless. These scenario definitions will be similar to those presented in Eye On Fiber, Vol. 3, Issue 2. We present an example of such a scenario definition in Table 1.

Table 1: Room Cost, Fiber Conversion Cost and Node Count That Favor FTTD, From Eye On Fiber, Vol. 3, Issue 2

Where is FTTD less expensive?	node values checked

telecommunication room, $/Sq.Ft.=	$ 100.00	$ 150.00	$ 200.00	72
				96
				144
$/Conversion ENDfl	at any number of nodes per floor less than			192
	this value, FTTD is less expensive			240
$ 100.00	144	192	240	
$ 125.00	96	144	192	
$ 150.00	96	96	144	
$ 175.00	72	96	144	

Note: FTTD may be less expensive at larger nodes/floor, but not at the next

Increment of 48 nodes

In summary, we will develop a description of the wireless user, his perceptions, and his requirements. We will develop a realistic cost model for wireless networks with both hidden and obvious costs. We will identify scenarios in which FTTD may be a better choice. We will look for hidden costs and limitations. We will issue one preliminary report and one final report. The report will address the questions and subjects in Table 2, presented at the end of this section.

To perform this comparison study, Pearson Technologies requires a minimum of ten clients to commit to this study. The cost for each initial client is $4000, with 50 % down and 50 % upon delivery of the report. Pearson Technologies will consider this report a private client report, but will market it to other clients after its completion. The price to other clients will be $6000. Pearson Technologies will refund one half of the $2000 difference (between the $4000 and $6000 prices) to the initial clients until the net cost is $3000 per initial client. Delivery will be approximately 16 weeks after we have the minimum number of initial clients.

We started this section with the question: How Can FTTD Challenge Wireless? The answer is with a realistic view of the relative merits of the two technologies.

Many of you know Pearson Technologies and our work in fiber optics for the last 24 years. Some of this work has been with the FOLS in our joint development of the fiber–UTP cost comparison model (www.fols.org). By nature, we are analytical, with an excellent grasp of fiber network cost factors. We

will apply our knowledge and analytical skills to the wireless world to create an accurate and unbiased comparison of the two technologies. With such an accurate comparison, our clients will be able to focus their resources on high return activities and apply the appropriate investment in pursuing low probability opportunities. With such a focus, our clients will become more profitable.

Thirty-two years ago, a friend of mine made a statement that I still remember: I do not argue with reality. We intend to create a picture of reality that will assist you to improved fiber profits.

Call to discuss your interest in this study: 800-589-2549.

Table 2: Outline of Proposed Wireless-FTTD Report

Part 1: What is Wireless?

General Description

Architectures

Capabilities

Limitations

Advantages and Disadvantages

Typical Implementations

Cost Factors

Market Perceptions

Major Suppliers

 Relative Strengths and Weaknesses

Industry Organizations

Standardization Activities

Future Developments

Part 2: Qualitative Comparison to FTTD

Part 3: Quantitative Comparison to FTTD

Cost Model Comparison

Upgrade Cost Comparison

Part 4: Summary

Strategy For FTTD

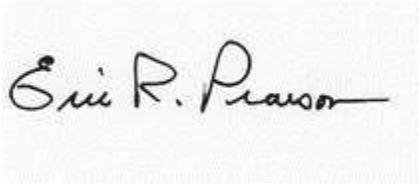Scenarios That Favor FTTD

Scenarios That Do Not Favor FTTD

Appendices

References

Contacts

Web Sites

Respectfully submitted for your consideration,

Eric R. Pearson, CPC, CFOS

Pearson Technologies Web Sites

http://www.ptnowire.com   http://www.FTTDnow.info

http://www.fiberopticlawsuits.info   http://www.sfoi.info

Contact Pearson Technologies Inc.

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[1] We expect there to be at least five such factors.