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TELECOM AND THE SIX CONVERGENCES

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[*44] In the telecommunications industry, history and time are compressing. For those of us who have spent the last several years in a whirl of nonstop travel, negotiating the complex set of terms under which the networks of new competitive local exchange carriers (CLECs) will connect to the incumbents' networks, there often is little time to reflect where we are heading. What will be the shape of telecommunications, and the way we transmit information in this information-intensive age, five years from now? As someone who was present at the creation of local competition, I believe there are two keys to the immediate future:

First, the exploding demand for bandwidth (the capacity to move information) will be the critical driver these next five years.

Second, in the long run there cannot be robust, sustainable local telephone competition absent the presence of at least a second and a third physical pathway (or loop) to end users. A variety of technologies may well come into play but, regardless of technology, the local experience will replicate that of long distance: Until there are alternate physical networks, including pathways to the end user, there will not be widespread, sustainable wholesale and retail competition.

At the same time, reading today's tea leaves, I believe following a short-term period of transition, we can be certain that in five years six critical "convergences" will have occurred:

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- We will have seen the continued convergence of companies. Industry consolidation among companies offering complementary customer bases and transmission facilities (for example, local, long distance and Internet; fiber and wireless) will continue to be a fact of economic life for at least the next few years. Such a trend can be expected for several reasons – among the most prominent is that as the regional Bell operating companies (RBOCs) are allowed back into long distance, traditional long distance carriers simultaneously will need to offer local services on a broad, sustainable basis if they are to protect their core market.

- Second, there will be the convergence between the regulatory arena and the commercial business arena. Long distance competition was born in the regulatory crucible through hard-pitched legal battles, yet by the late '80s, it had converted principally to a commercial business footing. In a similar way, local competition also is likely to make a transition to a point where the regulatory and business drivers converge, leaving a still-expanding marketplace driven principally by commercial, not legal, rivalries.

The exploding demand for bandwidth (the capacity to move information) will be the critical driver these next five years.

The real driver will be the growth rate of competing alternate local networks with direct connectivity to the end user. Once competing capacity is widely available, a lessened regulatory hand is necessary as a substitute for market competition.

This convergence of technologies also is driven by considerations of time to market. For example, should voice over electrical wires become a mainstream alternative, it may go far to resolve the deployment barrier inherent in building access and buildout issues, particularly in the residential marketplace in a seamless, nonintrusive fashion.

- Fourth, there will have been the convergence of the critical, underlying network operating systems – for preordering, ordering, billing and maintenance and **[*46]** repair – facilitated by the maturation of industry standards, including electronic gateways. The current lack of standardization and interoperability in interfaces and gateways –

resulting in numerous redundant systems – in practice has produced a nightmare world of capital expense, functionality and employee training mandates.

Today, different systems are used in virtually every ILEC region, with different systems often operating side by side even within a given ILEC's territory. Like the electronic date-information industry, which rapidly was forced by its own economics to uniform international standards, pure marketplace economics are beginning to drive this convergence, most immediately through the activities of organizations such as the Ordering and Billing Forum (OBF) and the Tele-Management Forum (formerly the Network Management Forum).

- Fifth, there will be the convergence among different utilities, as well as of utilities and software industry segments. The first signs of this can be seen in the Pepco Communications/RCN Corp. joint venture in the Washington area, which will offer local telephony under the name Starpower Communications. Similarly, ICG Communications Inc., Englewood, Colo., has negotiated a series of partnerships with electric utilities nationally.

Each such venture appears driven by basic marketplace realities: for example, partnering by CLECs with electric utilities allows the CLECs to leverage the existing private fiber networks of their electric partners as well as the electric industry's ubiquitous access to public and private rights of way. Simultaneously, electric utilities have a means to leverage their premium reputation and assets in their incumbent markets into high-growth telecommunications opportunities.

- Sixth, we will see the convergence with telecom companies of traditional telecommunciations transmission functions with the provision of content. This, as with the Microsoft/Ameritech partnership, is the natural outgrowth of the drive to leverage one's core assets through vertical integration, thereby at once maximizing both shareholder and consumer value.

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The realization of these six telecommunications “convergences” will not occur overnight. The next several years will be a period of tremendous evolution, in which increasingly complex technical matters – standardization of gateways, adoption of performance standards for incumbents, implementation of “permanent” number portability and second-generation interconnection agreements – will be at the forefront of regulatory activity.