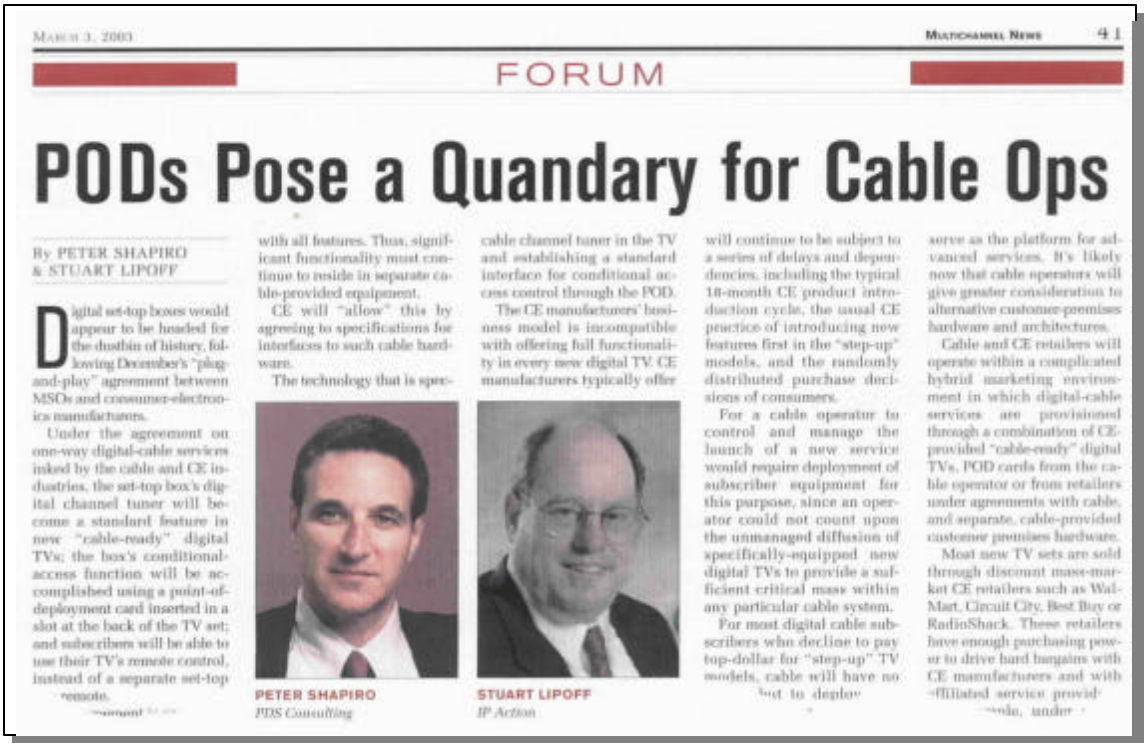

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FORUM

PODs Pose a Quandary for Cable Ops

By PETER SHAPIRO & STUART LIPOFF

Digital set-top boxes would appear to be headed for the dustbin of history, following December's "plug-and-play" agreement between MSOs and consumer-electronics manufacturers.

Under the agreement on one-way digital-cable services inked by the cable and CE industries, the set-top box's digital channel tuner will become a standard feature in new "cable-ready" digital TVs; the box's conditional-access function will be accomplished using a point-of-deployment card inserted in a slot at the back of the TV set; and subscribers will be able to use their TV's remote control, instead of a separate set-top remote.

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The CE manufacturers' business model is incompatible with offering full functionality in every new digital TV. CE manufacturers typically offer

will continue to be subject to a series of delays and dependencies, including the typical 18-month CE product introduction cycle, the usual CE practice of introducing new features first in the "step-up" models, and the randomly distributed purchase decisions of consumers.

For a cable operator to control and manage the launch of a new service would require deployment of subscriber equipment for this purpose, since an operator could not count upon the unmanaged diffusion of specifically-equipped new digital TVs to provide a sufficient critical mass within any particular cable system.

For most digital cable subscribers who decline to pay top-dollar for "step-up" TV models, cable will have no

serve as the platform for advanced services. It's likely now that cable operators will give greater consideration to alternative customer-premises hardware and architectures.

Cable and CE retailers will operate within a complicated hybrid marketing environment in which digital-cable services are provisioned through a combination of CE-provided "cable-ready" digital TVs, POD cards from the cable operator or from retailers under agreements with cable, and separate, cable-provided customer premises hardware.

Most new TV sets are sold through discount mass-market CE retailers such as Wal-Mart, Circuit City, Best Buy or RadioShack. These retailers have enough purchasing power to drive hard bargains with CE manufacturers and with affiliated service provid-

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Under the agreement on one-way digital-cable services inked by the cable and CE industries, the set-top box's digital channel tuner will become a standard feature in new "cable-ready" digital TVs; the box's conditional-access function will be accomplished using a point-of-deployment card inserted in a slot at the back of the TV set; and subscribers will be able to use their TV's remote control, instead of a separate set-top box remote.

The agreement is consistent with Federal Communications Commission mandates that require the phased-in availability of digital TV tuners. Cable and CE negotiators are moving to extend the current agreement to address bidirectional products and other service requirements.

Representatives of the respective industries are in pursuit of overlapping goals: For CE, to capture the functionality and value now trapped within the set-top box; and for cable, to materially reduce capital expenditures on consumer-premises equipment. We predict that these goals will not be realized.

Thinking beyond the box

Although digital boxes as we know them today are an endangered species, most digital cable subscribers will continue to utilize some type of cable-provided hardware, in addition to the POD and their new "cable-ready" digital TV set. This outcome is virtually guaranteed by the imperatives of the CE business model and by the technology required for current and new cable services.

That's because the CE companies would be unwilling to violate fundamental aspects of their business model - under which, by definition, low-end TV sets are not offered with all features. Thus, significant functionality must continue to reside in separate cable-provided equipment.

CE will "allow" this by agreeing to specifications for interfaces to such cable hardware.

The technology that is specified in the cable-CE agreement will be insufficient even for familiar one-way digital cable services, like an electronic program guide that conforms to cable's look-and-feel specifications, or directed channel tuning that sends subscribers to message screens when they tune to nonauthorized channels.

The limitations of "cable-ready" digital TVs will be increasingly apparent for new one-way digital cable services, such as local digital video recording; current two-way digital services, such as interactive pay-per-view and video-on-demand; and future two-way services, such as interactive-TV commerce, Internet-protocol telephony, or multiplayer games - not to mention any new services yet to be defined.

Most "cable-ready" digital TVs will lack technology such as an upstream data transmitter, extra memory; an operating system, character generator and graphics generator; and possibly the middleware that would enable cable operators to download navigation structures or control scripts, and employ other features to establish a cable-defined look and feel.

Such technology goes well beyond simply placing a digital-cable channel tuner in the TV and establishing a standard interface for conditional access control through the POD.

The CE manufacturers' business model is incompatible with offering full functionality in every new digital TV. CE manufacturers typically offer a range of products. They offer low-cost, high-volume "leader" products to cover their research and development and manufacturing overheads, and they offer more fully featured "step-up" models that are sold in lower volumes but generate higher margins and most CE profits.

The CE business model would not allow all new digital TVs to become essentially "step-up" products. CE manufacturers believe strongly in competitive differentiation. To the extent that technology and features are specified by government mandates or through a cable/CE agreement, there is less room for CE manufacturers to differentiate their products since, in addition to furniture and industrial design features, the bases for differentiation include the man/machine interface, navigation, and control capabilities. CE manufacturers may choose to offer such advanced features but initially not in all new digital TVs.

Caught in the cycle

Let's assume, following the next agreement between cable and CE, that CE manufacturers do put basic two-way capabilities into all new digital TVs. Even so, the rollout of specific new cable services will continue to be subject to a series of delays and dependencies, including the typical 18-month CE product introduction cycle, the usual CE practice of introducing new features first in the "step-up" models, and the randomly distributed purchase decisions of consumers.

For a cable operator to control and manage the launch of a new service would require deployment of subscriber equipment for this purpose, since an operator could not count upon the unmanaged diffusion of specifically-equipped new digital TVs to provide a sufficient critical mass within any particular cable system.

For most digital cable subscribers who decline to pay top-dollar for "step-up" TV models, cable will have no option but to deploy customer-premises equipment in order to deliver most one-way and two-way services.

We expect that the final cable and CE agreement will extend specifications for the POD interface to allow command-and-control links with external, cable-provided customer-premises hardware. Depending on the one-way or bidirectional digital services supported in the subscriber's home - and the engineering and marketing choices made by the cable operator - this hardware may take the form of a set-top box, set-back box, media server or gateway.

Digital boxes presently provide a local infrastructure for future advanced services. Cable operators have long relied on their ability to build on such embedded infrastructure to add new services flexibly and at low incremental cost.

Cost of the card

By contrast, a cable subscriber with a POD card will no longer be pre-equipped for most new service offerings, and cable operators' calculus for rolling out new products will now need to include the cost and marketing implications of installing additional hardware and software at the subscriber premises.

Set-top boxes have been a near-automatic first choice to serve as the platform for advanced services. It's likely now that cable operators will give greater consideration to alternative customer-premises hardware and architectures.

Cable and CE retailers will operate within a complicated hybrid marketing environment in which digital-cable services are provisioned through a combination of CE-provided "cable-ready" digital TVs, POD cards from the cable operator or from retailers under agreements with cable, and separate, cable-provided customer premises hardware.

Most new TV sets are sold through discount mass-market CE retailers such as Wal-Mart, Circuit City, Best Buy or RadioShack. These retailers have enough purchasing power to drive hard bargains with CE manufacturers and with affiliated service providers. For example, under agreements with cellular and direct-broadcast satellite operators, retailers collect residuals on revenues generated by subscribers who were signed-up in their stores.

If retailers offered cable PODs at the retail point-of-sale, it would give cable some visibility vis-a-vis DBS at precisely the time and place in which subscribers can make the competitive choice between cable and DBS. However, while retailer distribution channels may be strategically important for cable operators, the associated retailer incentives could be costly.

CE retailers have complained that cable operators' rate structures for high-speed Internet access discourage retail sale of cable modems. Meanwhile, CE retailers sell home-networking gear that operators might prefer to see embedded within future services.

Were CE retailers to market a core cable product such as digital cable by offering PODs along with "cable-ready" digital TV sets, it would add an important new dimension to an already complex relationship between cable and CE stakeholders.

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