

# Commodization of Technologies

By Barry Blesser and Derek Pilkington © 1999

In the past two decades, many industries have undergone substantial change as computer and data transmission technologies have become less expensive and more far reaching. Many industries have been based on specialized technologies and arts. While some of the art may remain, much of the art and specialized technology has been replaced with commodity hardware and software technologies. As the technical uniqueness of these industries has diminished, the challenges for management have changed. They must understand and exploit commodity technologies and the implied risk of commoditization, while maintaining differentiation. Examples of such industries are wide ranging and include telecommunications, audio/radio, video/television, home entertainment and all types of publishing and data dissemination.

This fundamental change has resulted in business failures when management was caught unaware of impending change, or were unable to manage it. At the other extreme, dramatic business growth can be attained when management sees a changing tide and has the tools to successfully managed it. While the use and technical growth of the underlying internet and computer technologies are widespread and growing, many companies are still struggling with the impact on their own industries. One reason for this is that management does not appreciate the implications, or are too busy protecting their existing market share to see the market collapsing around them. To be successful first requires an ability to recognize change early in its lifecycle, and then to have the courage and knowledge to exploit it before your competition does.

To some degree, the implications differ depending on where in the chain a company or industry exists. Consider the newspaper, while the content creation remains with journalists, their tool is now a word processor not a typewriter, the production is no longer type-set but a publishing software package, the printing press has been replaced by a Web site with delivery of content over the internet not by the local paper boy. The impact is felt at all points in the chain and both the newspaper and it's equipment suppliers and distributors must adapt quickly to the change, or become dinosaurs. Creation and distribution present slightly different but related challenges. In distribution the challenge is to adapt to a new channel for delivery; be it CD-ROM, or the worldwide web. The provider must shift content creation to match the new delivery mode. In designing content creation tools, the manufacture must use commodity technologies to be compatible with their user's environment, to remain competitive, and still maintain differentiation.

These transitions are difficult and fraught with risks that many managers are untrained to address since they started when their industry created its own technologies and content. In many engineering departments, development of specialized technology is rapidly shifting to exploitation of commodity technology with only a small remaining piece of art. Many R&D managers are unwilling to accept that much of the art is now falling to commoditization.

The audio equipment industry for radio offers us a good case study. In years past the majority of radio stations used a piece of hardware known as a "Cart" machine to

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store and playback audio. Manual scheduling systems were used to program their transmission and track their ad time. The “Cart” machine was truly a work of art, it was almost exclusively an audio product consisting of specialized audio circuitry, servo controls and mechanics to move tape and magnetic pickups to read or record to tape (which itself was specifically designed for audio applications.) While existing using electronic components, the creation of the Cart machine required extensive specialized expertise.

Today, the Cart machine has been replaced by client-server based storage and networked systems. One of the most successful companies to produce such a product started with little audio expertise at all. Nevertheless, why would they need it, the storage medium was a hard disk the data itself was digital provided by an off-the-shelf audio card. The user-interface could use standard windows tools. Indeed, all they sold was software. In addition, the digital domain gave many advantages, an off-the-shelf database was included to manage all scheduling and accounting, editing tools could be created with no added products cost, users could assess the audio anywhere on the network, rather than require multiple “Cart” copies to be made and distributed. The upside to radio stations was tremendous. The technology took off rapidly and the “Cart” rapidly became a dinosaur, with most manufactures having dropped it completely.

The company that was most successful was not even a previous player in this market. They came to the game with no market to protect and no historically based prejudices about the art. While the management faced many problems in growing and developing this business, most had nothing to do with audio but rather with taking off-the-shelf technologies and applying them to a specialized niche. They required experts in networking, databases, user interface design, control systems and solid product management to understand the needs of their customer – they just bought the audio piece.

Some established audio equipment providers also made this transition successfully; most failed. Many other industries have seen similar transitions, others are still in transition, yet others will see it sooner than they are prepared to address it.