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Cost analysis: Low-end digital TV converter boxes

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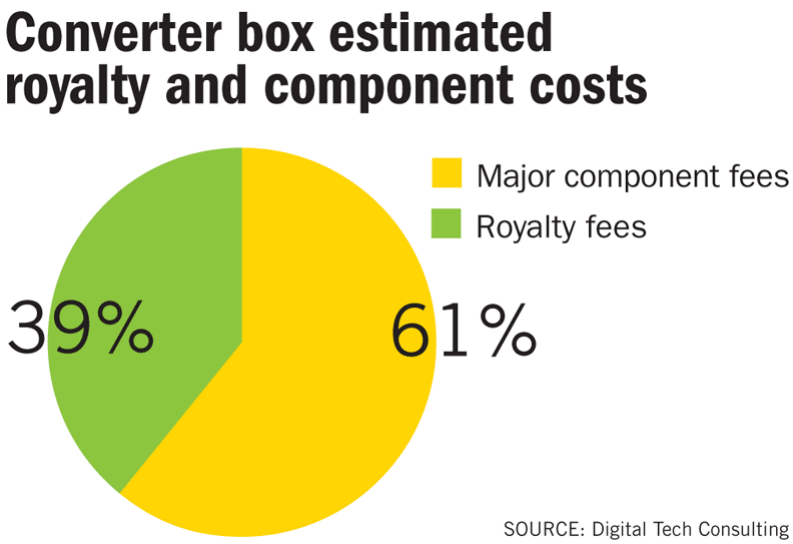
Digital video products aren't new anymore. Now, instead of creating innovative digital products, the industry is using well-established standards and off-the-shelf components to make low-cost devices that fill the mass-market pipeline.

From low-featured DVD players and digital terrestrial TV set-top boxes (STBs) to digital picture/video frames, the race to the bottom is on. And, in short order, there will be new products to add to that list as today's innovative technologies mature into potential mass-market items.

Of course, the common thread for all these products is the ability to build them cheaply. And this is where technology standards—and what it costs to implement those standards—play a significant role.



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A recent cost analysis of U.S. Advanced Television Systems Committee (ATSC) digital-to-analog converter boxes, which retail for $40 to $70, illustrates the distribution of costs between parts and intellectual property (IP). When factoring in major component costs (demodulator/decoder chip, power supply, casing, remote control and input/output panel) and royalty costs, Digital Tech Consulting estimates total costs are $28 to $32, excluding assembly, shipping and tariffs.

That estimate is for devices that include only the mandatory features as specified by the U.S. National Telecommunications and Information Agency. Additional features not included in the cost analysis—such as a programmable function on the remote control, analog pass-through

technology and a smart antenna interface connector—are classified as "permitted" but not mandatory. Each of these would add an incremental cost to our analysis.

With an estimated 49 percent of costs made up of royalty fees—for IP for both open standards and proprietary technology—it's easy to see the important role IP plays in the calculation for making mass-market products. Although royalty fees vary from product to product, royalties for the D/A converter boxes are similar to those required for devices such as digital satellite and cable STBs. Despite the low margins, many suppliers anticipate they will benefit from entering this temporary market, and converter box sales have been quite healthy, with an estimated 18 million units shipped in the first three quarters of 2008.

Conspicuously absent from the D/A converter box market are many of the major consumer electronics (CE) and technology companies that created the technologies inside the product. Collecting revenue from technology and, in some cases, brand licensing is the most logical way for some market veterans to profit from this short-lived opportunity.

Building low-cost, offshore-manufactured consumer electronics products for distribution in the United States is nothing new. Established CE players have been doing it for years but they have kept their hand primarily in product development.

Now there is a trend toward low-cost manufacturers offering in-house development capabilities, allowing "brand-rich" companies to merely license the valuable brand without incurring the expense of product development and technology invention. The risk in this scenario, of course, is taking something valuable and reducing that value to the sum of its parts.

This raises some challenging questions. If CE companies outsource manufacturing and product development, where will future technology innovation come from? The eventual rewards from licensing revenue streams may be enough to keep the traditional innovators on the R&D track, but these subtle shifts in product development are bound to have some impact on the source of the next "must-have" consumer technology.

Myra Moore is president of Digital Tech Consulting, a boutique market research firm that specializes in tracking and analyzing the consumer digital video market.