

**Strength in Unity**

One of the fastest and easiest ways to meet the challenge is to work with experienced companies, including solution providers. This allows the manufacturer to leapfrog ahead of the competition without suffering the aches and pains of the trial and development stage. Working with a solution provider also gives TV manufacturers the opportunity to improve their understanding of the market requirements.

The advantage of working with solution providers lies in the ability of these companies to offer market-proven solutions. Companies like IKONVERGENZ Pte. Ltd. maintain a portfolio of field-tested, production-ready TV solutions with the specifications and functionality to serve in CRTs, LCDs or PDPs, in analog or digital environments, and thus to address the needs in the TV replacement market.

**Experience and Background**

The IKONVERGENZ team has a broad range of experience and knowledge that includes instrumental development of integrated digital TVs for the United Kingdom and continental Europe; involvement in defining the so-called D-Book specifications for digital terrestrial broadcasts and receivers; and development of patented, global, digital and analog TV solutions. As value-added propositions, the company can offer TV manufacturers flexible, field-tested solutions that make it possible to address the complicated global TV markets, digital and analog, cost-effectively within a few months.

Products in the IKONVERGENZ portfolio encompass analog, digital and custom requirements. With its Polaris, Kentaurus, and Perseus LCD TV chassis,

the company addresses needs for optimum audio and video performance and for a cost-effective bill of materials. Each is suitable for PAL, NTSC or SECAM formats. Polaris works with panels from 17 to 23 inches, Kentaurus accommodates 23- to 42-inch screens, and Perseus serves in sets with 32-inch and larger panels. IKONVERGENZ's DigiTVModul works with all three chassis or other analog chassis and with set-top boxes. It provides the hardware architecture for converting an analog set to accept digital signals, either DVB-T or ATSC, as well as analog ones. The DigiTVConnexx engine features proprietary software to control DTV software subsystems. Stable and robust, it conforms strictly to layered software architecture, and maintains the middleware functions independently of the other software layers.

**Getting a Head Start**

Being able to generate large volumes of a quality, reliable product with a wide reach allows TV manufacturers to achieve the economies of scale in manufacturing without the headaches of product returns and service calls. Good-quality, reliable TV sets enhance a company's brand value, attract strong, positive reviews from the media, and generate good word-of-mouth from consumers. In turn, this can lead to repeat business and can even attract new business.

In the age of digital TVs and multimedia content, manufacturers must re-invent themselves and must secure a suitable footing in an overcrowded market. Complacency and inflexibility will restrict the capacity to compete. The future of the TV industry belongs to manufacturers with the foresight and willingness to innovate and to adapt, because industry conditions will allow only the fittest to survive.

**About This Article**

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# DISPLAY DEVICES

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# Newcomers to TV Field Issue Challenge: 'Survival of Fittest'



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**TV developers must demonstrate agility on multiple fronts at once. Broadcast regulations and specifications are changing with the arrival of digital high-definition systems. New technologies that enhance performance, add sophisticated features or raise value continue to appear. Meanwhile consumers and retailers continue to demand the lowest possible prices for even the most advanced sets.**

TV has evolved steadily with the progress in display and signal-processing technology. First there were moves from bulky CRTs to slim, flat-panel display sets like LCD TVs and plasma display panel (PDP) TVs. Then TV technology underwent an evolution from a purely analog medium using PAL, NTSC and SECAM formats to a digital platform using DVB-T, ATSC, and ISDB-T specifications. In the medium term, ergonomic, integrated digital TVs (DTVs) using LCD panels are going to replace the classic TV tube.

Across the globe, the terrestrial TV market is changing. Many countries now have clear mandates for digital terrestrial TV services. A number are moving toward the dates when they will switch from analog to digital systems. Thus there is a growing need for TV manufacturers to provide integrated digital TV sets.



At CeBIT, Tatung demonstrated a 37-inch LCD TV that uses an IKONVERGENZ solution.



One of the integrated DTV solutions available from IKONVERGENZ

## New Requirements

Although digital transmission will become the de facto mode for broadcasters during the next few years, many TV manufacturers are struggling at the moment with the new requirements. Lack of familiarity with the new technologies and lack of experience with the new systems present challenges. Government mandates add to the tasks facing TV manufacturers.

For instance, the U.S. Federal Communications Commission (FCC) has set February 2009 as the switchover date for digital broadcasting in the United States. However, dates differ by country, so some European broadcasters will make the change before 2009, and others will do so by 2011. Furthermore, nearly all broadcasters plan regional phase-in of digital services, meaning that for a time, some viewers each country will continue to receive analog signals even as digital programs begin to reach those in other areas.



IKONVERGENZ solutions serve in LCD and CRT sets.

Under these conditions, TV manufacturers have to figure out how to provide suitable product lines corresponding to each switchover date. If they are too quick or too slow to provide digital-only sets, sales will suffer. TV vendors also have to address the multiple channels consumers now use to buy TVs, including retailer shelves, catalogs and Internet vendors. For each of these channels and markets, TV manufacturers must be ready to supply sets that comply with existing and upcoming broadcast specifications.

## Broadcast Formats

The complexity facing TV manufacturers increases when serving different markets having different requirements for analog and digital transmission. The disparities can stretch resources and can raise costs for development, logistics and inventory. As an example, TV manufacturers serving the market in Taiwan will have to deliver sets compatible with NTSC and with DVB-T. A TV for the German market will have to comply with PAL and DVB-T formats. In the United States, the necessary formats are NTSC and ATSC. Over in France, the sets must work with SECAM and DVB-T.

Even when two countries have similar standards, variations occur. For instance, Germany requires PAL and DVB-T. The

United Kingdom also uses PAL and DVB-T, but adds the Multimedia & Hypermedia Information Coding Expert Group 5 (MHEG-5) specification. Italian broadcasters provide services for PAL and DVB-T using the Multimedia Home Platform (MHP).

TV manufacturers catering to all these countries must have large development teams, manufacturing and logistics facilities to accommodate the diverse requirements. Investment and development costs become astronomical. In many cases, the small manufacturers can focus only on a few markets, thereby losing out on the big business opportunities that are available.

## Enticing Prospects

Given the switchover from analog to digital signal transmission, it is likely that several hundred million TV households globally will replace the TV sets in their living rooms with the latest integrated digital TVs. This makes the business very attractive to many TV manufacturers. In fact, the potential is too large for any serious TV supplier to ignore.

Many new entrants to the TV business will compete with existing manufacturers for the same piece of pie. In the long run, the complexity of the business will lead to many casualties, a business version of the theory of natural selection. Charles Darwin proposed this theory to explain how evolution occurs in nature. In the business world, as in nature, changing circumstances require the inhabitants to adapt. Those most successful at adapting will endure: This is the survival of the fittest.

The fields of consumer and information electronics offer many examples of this theory at work. For example, typewriters gave way to word processors, which then evolved into multiple-function computers, which now are becoming



Close-up of an IKONVERGENZ chassis

multimedia platforms. Similarly, digital cameras have replaced the once-dominant film-based cameras, which today form a niche market largely for purists and ultra high-end professionals. Likewise, in the TV industry, those companies with the ability to adapt and to provide products and solutions for the future will survive.

## Finding Resources

Unless TV manufacturers have the time, resources and experience to develop appropriate solutions, they will struggle to maintain their businesses. Appropriate solutions will be those that offer flexibility, and that cut costs without compromising on picture quality. For companies that are not nimble enough to adapt, the returns on their efforts may not justify the necessary levels of investment. Eventually, this highly competitive market, where there is no margin for error or delay, will take its toll.

The ongoing challenge for any TV manufacturer is to deliver TVs with the latest features and functions quickly (fast time-to-market) at the lowest possible price (low cost) while maintaining a certain level of performance and reliability (high quality). TV manufacturers, with limited resources struggle to meet this challenge. They must explore ways to compete in the digital age (adaptation and survival), or become relics of the past (extinction).