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INSIGHT

All-in-one

Hybrid devices revolutionize
the living room as
multimedia centers



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Hybrid devices revolutionize the living room as multimedia centers

The days when living rooms accommodated a host of different media equipment items will soon be over: consumers have long wanted multimedia centers for the living room that are genuine all-rounders. In technical terms, this is increasingly taking shape, driven by the advancing convergence of television and Internet. Various media devices already offer the potential to become home control centers. In this respect, hybrid television sets hold the best prospects.

From the consumer's perspective – preferably all in one

Passive television viewing habits (so-called "lean back") dominated living rooms up until only ten years ago. Along with conventional television, however, a large number of media devices with different functionalities have established themselves in the living room over recent years. Consumers no longer wish to merely watch television as passive viewers, but would prefer instead to structure their own evening viewing programs according to their individual preferences, including the active use of set-top boxes, gaming consoles, PC/media centers and Blu-ray players.

Today's consumers who wish to relax and enjoy some video content are faced with managing a number of different devices involving a multitude of different remote controls. This is both impractical and hardly represents the way ahead. The consumer would like something simpler – a single device for everything: the central multimedia station. And he wants this as soon as possible: almost half of all consumers would already favor such an all-in-one device, according to a representative survey conducted by goetzpartners. Consumers have acquired a taste for such systems as a result of new technical possibilities: since hybrid TV sets are rapidly bringing about a convergence of Internet and conventional television, the multimedia station is no longer just a vision, but is increasingly becoming reality.

“In many cases, today's consumers are still required to use different devices to view linear television or video-on-demand, for example, or to download Internet information, or play games. They find this both inconvenient and complex. In future, in the interest of consumers, all these services will be available on a few systems, or even on one single device. This device will bundle all content sources, and distribute them via a wireless home network to various end devices, for example.”

Franz Simais, CEO,
Humax Digital GmbH

“The integration of maxdome into hybrid TV sets, set-top boxes, or gaming consoles offers tremendous potential. If consumers dispense with their familiar linear TV viewing, and make the transition to maxdome with a few clicks and are able to download a film, then we have a use case that is also attractive for the broader mass market. I believe Video-on-Demand will then rapidly tap the mass market.”

Dr. Christoph Schneider,
CEO, maxdome

From the manufacturer's perspective – what does this all mean for the future?

The multitude of devices encountered in households today will no longer exist in the future. In other words, manufacturers that successfully integrate all interactive applications within one system will initially enjoy a unique selling proposition, and gain corresponding market shares. But what is more, these manufacturers will develop entirely new markets, since many applications ranging from gaming to shopping, or video-on-demand, will achieve mass-market breakthroughs. To date, such services necessitated use of different systems within the household, and are not yet networked and integrated, which is why a great deal of potential remains untapped. But new market opportunities will arise if TV viewers are able, for example, to purchase a film at the push of a button, directly order the leading actor's T-shirt, or play games directly on a TV set without having to boot a computer first or buy a gaming console. The first equipment manufacturers have already identified these opportunities, and started bundling accordingly.

Plenty of multi-talents, but still no genuine all-rounder in sight

Some devices are already close to becoming multimedia centers, above all hybrid TV sets with integrated Internet connections. Diverse applications are already running on some of these sets, and they provide access to video-on-demand offerings.

In the meantime, set-top boxes and Blu-ray players are also Internet-capable, while gaming consoles are already storing music and pictures, and computer manufacturers too are continuing to step up hardware and software capabilities: TV tuner cards and USB sticks for television reception have long become standard products, while PC monitors in widescreen formats are meeting with strong demand. They all represent promising multi-talented systems, but none of them are genuine all-rounders. So what is holding the market back?

In search of uniform standards

The fact that no manufacturer has unified all applications within one system is due to the considerable divergence of individual system standards still prevailing. Individual applications cannot yet be transferred to all existing systems without media discontinuity. The establishment of unique standards, however, is a key prerequisite for all-in-one devices to function as central control units, allowing data from the most varied types of equipment to be synchronized. Their task should not be to store all data themselves. However, they must be able to download data, and transmit it to other output devices without media discontinuity. Along with uniform standards for data exchange, a uniform standard for transmission, and

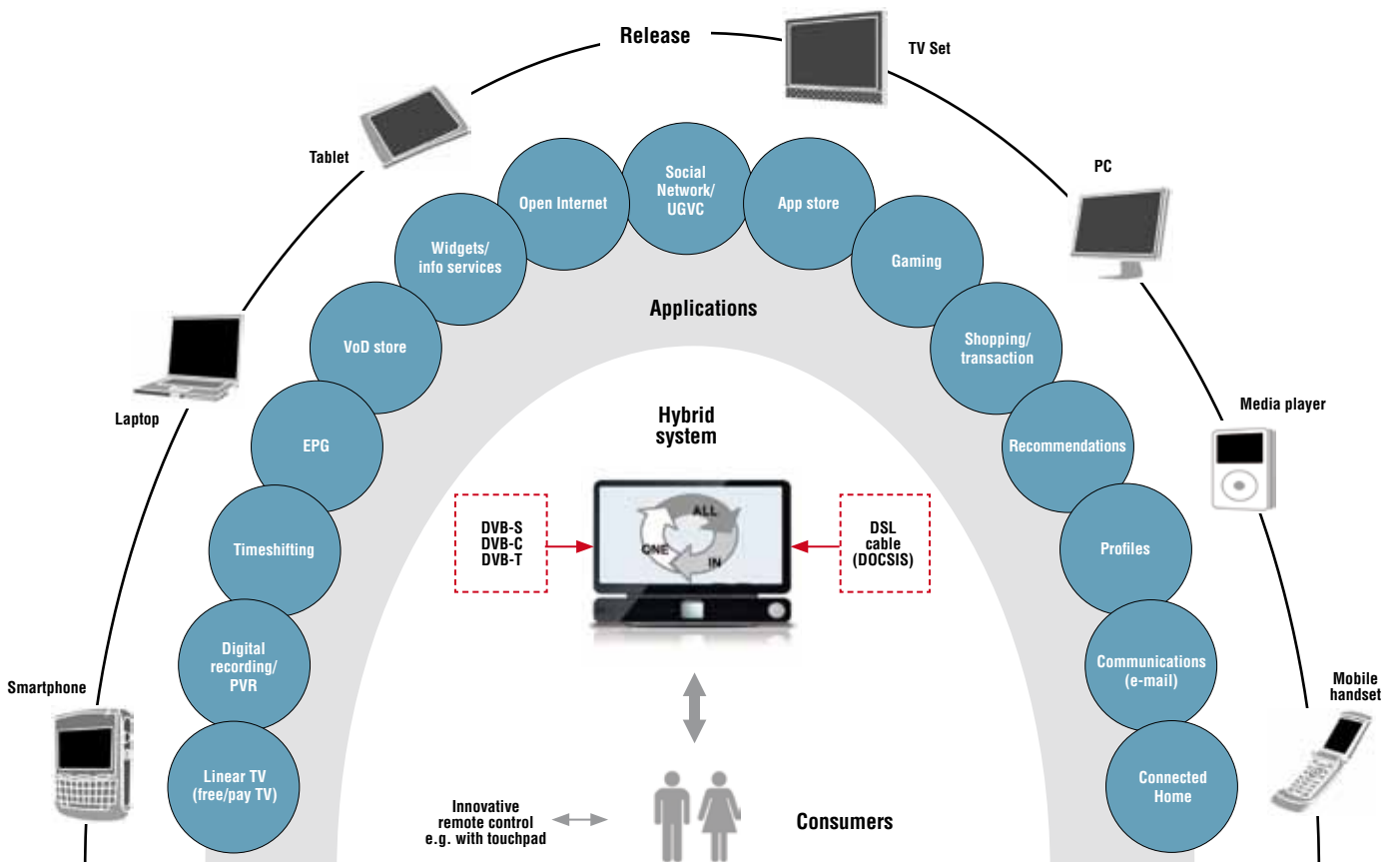
access to Internet content from a linear program, are also required. The HbbTV standard is currently regarded as highly promising in this context. This standard allows HTML Internet content to be transmitted to television sets on a standardized basis.

The essential capabilities of an all-in-one device

The all-in-one device must be able to integrate the most varied types of applications (please see Figure 1). Along with conventional TV, these include, for example, timeshifting functions, an Electronic Program Guide (EPG), access to Video-on-Demand (VoD) and applications (app) stores, widgets or the open Internet, gaming and shopping services, personal recommendation systems, as well as connection to a home network.



Figure 1: The all-in-one system



(goetzpartners)

“Snowflake offers the TV user innovative opportunities, such as a number of interactive additional applications, while the classic TV experience is guaranteed and the usage is totally intuitive for the customer.”

Olivier Lacour,
Head of Studio Design, NDS

Along with the intelligent bundling of these functionalities, four factors are decisive for establishing a system as a multimedia station:

1. Viewing and understanding

The **user interface** is the most important success factor. Consumers will be won over if the visual entry portal is structured to be intuitive and self-explanatory, and particularly if it sparks a “wow” effect. Providers such as Apple have pioneered this approach. The innovative Snowflake design concept from middleware and encryption specialist NDS is a further successful example of what interactive TV applications can look like. The Snowflake concept can already be seen today on the set-top boxes of telecommunications provider SFR in France, and it will soon be launched in additional markets in cooperation with various infrastructure providers. With Snowflake, the menu is overlaid on the current television picture (please see Figure 2). Such user interfaces also allow customers to find their way around without manuals or particular instructions. In other words, multimedia centers must be highly convenient and intuitive in their use.

2. Convenient and easy to operate

The **remote control** is the second most important success factor. Only one remote control unit controls all the functionalities of a multimedia centre. Consequently, it should also be designed and structured as simply as possible. Models with a hundred buttons are a thing of the past. The Apple TV box, for example, can be managed on a touch basis using an iPhone. Other manufacturers are working on control through movement and gestures (Nintendo Wii and Microsoft Kinect), while touchpads allow rapid cursor control, thereby facilitating the surfing experience.

Figure 2: Snowflake



(NDS)



3. Connection located

Connecting the system must also be a **simple procedure**. Broadband access is required to allow the multimedia center to download data from the Internet. Household telephone sockets are currently often located in halls or home offices, while other entertainment equipment items can be found in the living room. In other words, all-in-one devices will only be successful if they can be connected via wireless networks.

When purchasing multimedia devices, customers are also likely to highly value a single point of contact that not only provides the equipment, but also supports the user in the first installation process onsite / at home. This gives rise to new opportunities for specialist retailers, as well as for cable network operators and telecommunications providers who might also be able to provide this service.

4. Always up-to-date

Since technology will continue to develop dynamically, systems with **open interfaces** will enjoy the greatest opportunities. If software can remain abreast of the latest developments by regular synchronization, and new applications can be readily added, this will clear one major entry obstacle for customers: they will not have to wait for the arrival of even more mature software generations because the station will continue to grow along with the technology – and will not have to be replaced within just a few years.

All in all, it is not simply about integrating as many functionalities as possible into one system. The aim must be to design applications to be as user-friendly as possible. Users will only opt for new interactive applications if they offer superior convenience. The ability to expand and add on to devices and systems must be ensured in order to guarantee future viability and keep pace with the high degree of innovation on the markets.

“Along with 3-D, hybrid TV and networking are undeniably the megatrends of the next few years. Our customers rightly expect a product that will be viable in the future, and also provides functions that will perhaps require some time before they form part of everyday life. Whether Internet-capable televisions will already be standard within two years is no longer the question, in my opinion. The question is whether consumers will actually be ready to opt for these offerings. For this reason, we have concentrated from the very outset on a coherent overall concept in the implementation of these new technologies, which guides users in an intuitive and convenient manner. Along with killer applications, such as video telephony and video-on-demand services, this will comprise the genuine key to the success of hybrid television.”

Armando Romagnolo,
General Manager Product Marketing TV,
Home AV & Training CE Panasonic Deutschland

Which system will win the race?

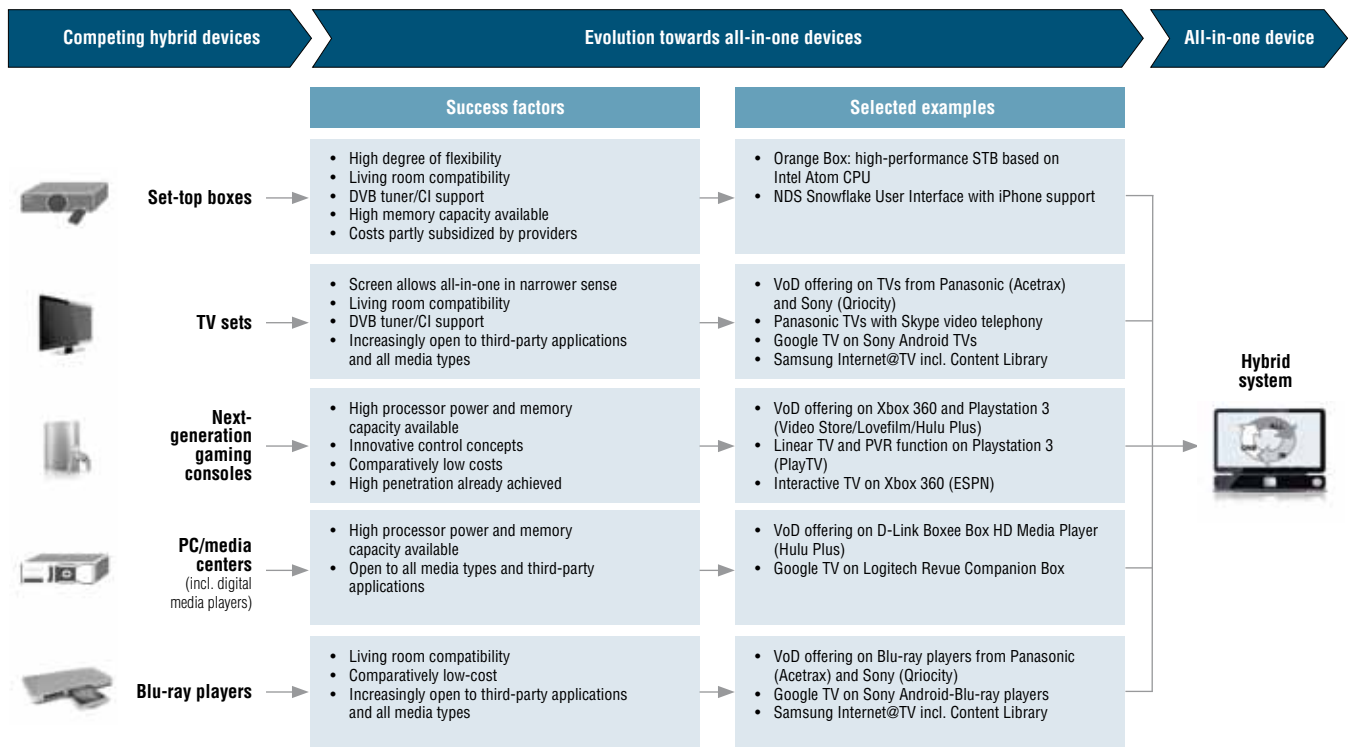
Many manufacturers will develop hybrid products in the future, and compete to build the first high-performance multimedia devices. There are five products above all, that offer the greatest potential: set-top boxes, hybrid television sets, next-generation gaming consoles, multimedia PCs, and Blu-ray players. The manufacturers of all of these products will further develop their existing models, and incorporate additional computing power, expand storage capacities, and extend interfaces that also allow the connection of alternative systems. There are already a few successful examples worthy of mention (please see Figure 3).

These three are ahead of the pack

Three product classes currently enjoy the best prospects of dominating the market of all-in-one devices:

- Above all other contestants, **hybrid TV sets**, which achieved market maturity in 2009, are leading the way. Around 2 million units were sold in Germany in 2010, according to estimates produced by the BITKOM sector association. As a consequence, their sales are already up fourfold over the year 2009, implying that more than one in five flat screen televisions sold in Germany are Internet-capable, according to BITKOM. All new television models will have Internet access by mid-2011 accor-

Figure 3: Competition between hybrid systems



(goetzpartners)

ding to the forecast. Around 31 million Internet-capable TV sets have already been sold in 2010 globally, as the iSuppli analysts state, while as many as 87.6 million sets are expected to be purchased worldwide in 2013.

- **Hybrid set-top boxes**, which offer particular flexibility since users can load multimedia content without having to switch television sets. By the end of 2010, the German market had already absorbed around 700,000 boxes.
- And thirdly, **gaming consoles** with back-channel capability that already offer high processor power as well as integrated Internet connection, and are in use in around 3.6 million households today.

By contrast, multimedia PCs and Blu-ray players are hardly set to conquer the living room.

- Although **multimedia PCs** deliver the highest performance, their lack of flexibility and high degree of complexity represent a disadvantage. As a consequence, multimedia PCs cannot always be readily connected to TV sets, while their user-friendliness leaves much to be desired. Moreover, they are also too clearly associated with work. Consequently, there is no great propensity to install them in living rooms.

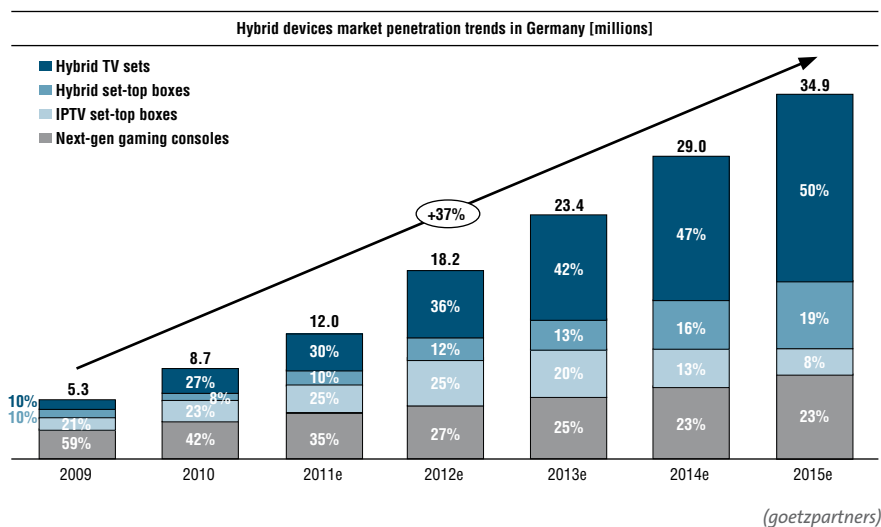
- **Blu-ray players** with Ethernet connections are unlikely to succeed: they are only encountered in one in every 40 households to date, according to the BITKOM sector association, and have therefore achieved far too little market penetration to win the competitive battle. In addition, there is also the question as to whether devices reproducing physical media will be viable for the future if data traffic will soon be mainly handled via downloads and streaming offerings.

The market is set for tremendous growth

Irrespective of the equipment that manufacturers are fielding in their market forays, they must achieve one thing: clearly communicate to consumers the additional benefits that multimedia all-rounders offer, thereby persuading buyers to also accept the higher prices of opting for these devices.

Hybrid systems will be tapping an enormous growth market, as all forecasts agree. goetzpartners assumes that the number of devices in households with back-channel capabilities will grow by 37% per year until 2015. This implies that around 35 million back-channel devices will have been sold by 2015 (please see Figure 4).

Figure 4: Hybrid devices sales trends



Initially, the manufacturers of hybrid televisions, hybrid set-top boxes, and gaming consoles, will engage in direct competition, and coexist. In 2009, around 3.1 million next-generation gaming consoles still dominated living rooms in the market for back-channel systems, followed by almost 1.1 million IPTV set-top boxes, 500,000 hybrid set-top boxes, and 500,000 hybrid TV sets.

“ ... and the winner is ... “ the hybrid television set

In the meantime, however, hybrid TV sets are already catching up rapidly. They will presumably have already outpaced gaming consoles by early 2012, which will subsequently lose significance over the long term. goetzpartners estimates that there will be more hybrid TV sets on the market than set-top boxes by the end of 2013, while more hybrid TV sets than IPTV set-top boxes will have been sold for the first time from 2014. Hybrid television sets will then dominate the market by 2015, and comprise 50% of all systems with return-channel capabilities and achieve market penetration of around 17.5 million devices.

“In the medium-term – over the next three to five years – hybrid TV sets will establish themselves in living rooms as all-in-one devices and as multimedia centers,” comments Dr. Alexander Henschel, the managing director at goetzpartners who was responsible for the study. This will allow consumers to use one system to access both conventional linear TV and video-on-demand services, to utilize a very wide range of different types of apps, such as information and entertainment services, surf the Internet and social networks, play online games with friends, or access their own music, photos and videos within a home network, and much more.

How will the developments unfold?

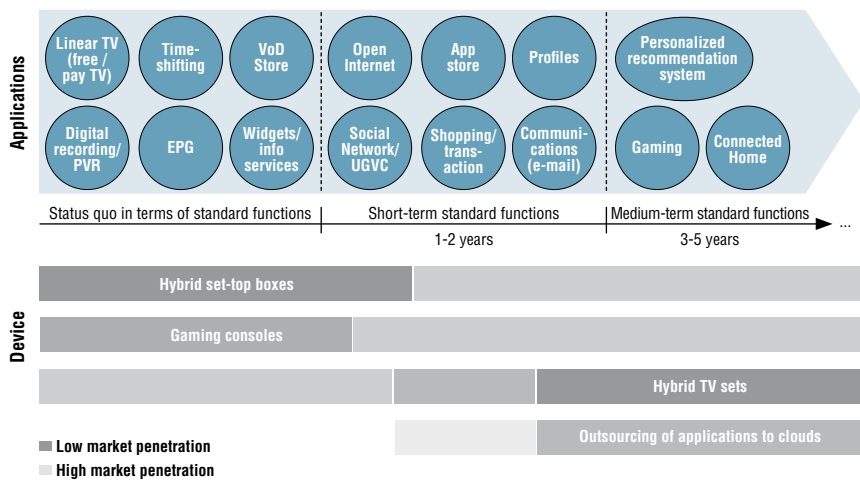
The triumphant march of the hybrid television will mean that many pieces of equipment in the living room will no longer be there in the future. Instead, over the next three to five years, television sets will handle everything that is still viewed and played today on a large number of devices. Moreover, all-in-one television sets will also continue to develop further.

At present, the number of applications on systems in Germany is rising at a considerably slower pace than in other countries. While shopping and video-on-demand already rank as standard applications for hybrid television sets in markets such as Hong Kong, their use in Germany is negligible today. Within three to five years time at the latest, however, apps and widgets will also be used extensively and area-wide on all German television sets. Moreover, all-in-one television sets will provide stronger support for home networking, thereby also enabling access to proprietary content (please see Figure 5).

In parallel with equipment manufacturers, however, providers of shopping or gaming services will also be required to upgrade their organizations. If t-commerce, along with e-commerce, is soon to be viable without media discontinuity, providers will have to structure their ordering, payments and delivery systems to be free of media interruptions. This requires cooperation ventures with partner companies that can rapidly integrate such processes into existing customer relationship management systems. Everything should be as easy for customers as the current Internet and catalog offerings they are already familiar with.

And what kind of computing power will systems require in the future? What data volumes will they be required to process in five years' time? Nobody knows yet precisely, but the volume will be enormous. For this reason, one further development seems clear: knowledge and data will be increasingly outsourced.

Figure 5: Development path



(goetzpartners)

A look to the future – the outsourcing of intelligence

Instead of integrating ever-greater computing power, providers will increasingly outsource more performance and storage capacities to Internet-based servers. In future, the cloud will bundle system intelligence. Initial trials are already underway in this direction: the OnLive games-on-demand service has already embarked on a test run, while Apple has also dispensed with memory capacity and taken this route with its recently launched Apple TV product. In other words, if we venture a look beyond the next five years, it is clear that the hardware complexity of all-in-one systems will decrease significantly. Dominance will shift from hardware manufacturers to content and service providers.

Although the cloud resources currently available are inadequate, and the requisite, area-wide broadband infrastructures are still not yet in place, sufficient cloud resources will be available on attractive terms as from 2013, thereby ushering in the shift in intelligence. This will reduce the complexity and computing power of hybrid devices and give rise to considerably more attractive prices.

Our summary

Within a short period of time the first equipment manufacturers will be providing precisely what customers want today. The first multimedia stations will soon conquer the market. Initially, the manufacturers of hybrid televisions, hybrid set-top boxes, and gaming consoles, will occupy this market, carving it up among themselves on a largely equal basis. But it is already becoming clear that in the very near future – in two to three years – hybrid television sets will prevail in the living room as central all-in-one devices, running a large number of applications. This will open up entirely new business areas and growth opportunities for many manufacturers.

On a longer-term view, the computing power of all-in-one devices will increasingly shift to the Internet. These systems will draw their performance and data from the cloud, and outsource their intelligence to servers. Proprietary systems – a decisive factor as closed systems up to that point in time – will then lose their significance again.

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goetzpartners Corporate Finance is focused on M&A. goetzpartners Management Consultants specializes in the fields of strategy, organization, operational excellence, sales and marketing, restructuring and strategic due diligence. goetzpartners is “Hidden Champion” 2009 in the fields of strategic due diligence, financial and merger strategies as well as post-merger integration (Corporate Finance Advisory).

TMT Industry Line

goetzpartners is one of the leading consulting firms in the telecommunications, media and technology area in Europe. goetzpartners deploys its in-depth expertise to support numerous clients in their orientation and transformation towards new market relationships within a converging media world. Drawing on strategically innovative approaches, and a strong implementation and value orientation, goetzpartners joins forces with its customers in improving their competitiveness and in securing sustained success.

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