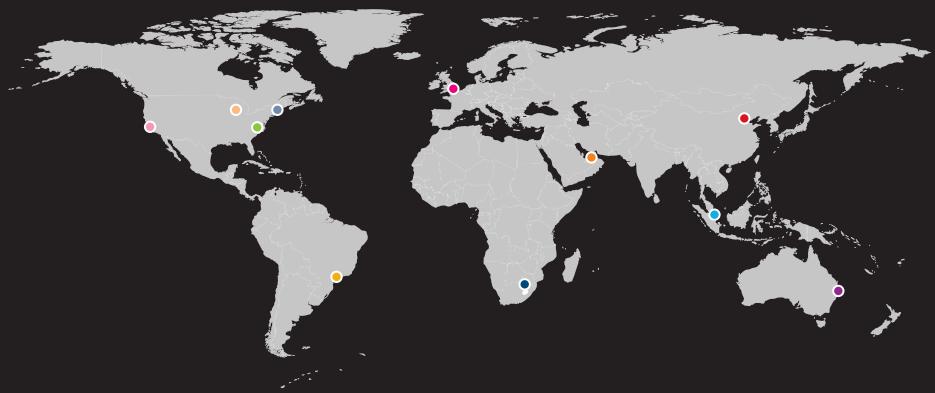




Broadband Perspectives

*A selection of recent
broadband research
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and unbundlers



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of much debate. Giles Cottle's connected TV survey provides an authoritative guide to industry sentiment about what will and won't work.

Two kinds of company need to know now, fearing that connected TVs could be their making or ruin. But, despite their shared heritage, the interests of consumer electronics firms and pay-TV operators are not necessarily aligned. Andrew Ladbrook's piece highlights the areas where they will clash and where they should collaborate.

Another concept that is confounding expectations is a superfast broadband technology called VDSL-from-the-central-office (VDSL-FTCO). VDSL-FTCO is arguably not a next-generation access (NGA) technology, because it does not involve replacing any copper with fiber. All operators have to do is install VDSL equipment in the central offices, or local telephone exchanges, where their current-generation ADSL kit resides.

NGA or not, VDSL-FTCO is helping both incumbents and their competitors get a leg up in the superfast broadband market, or at least defend their position against rivals with more advanced – and much more expensive – fiber-based networks. But, while the technology has its advantages, it also has its limitations. Stephen Wilson's piece provides a balanced analysis of where the real opportunities lie.

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The industry is convinced that this approach has legs, but the details are still the subject

Connected-TV Survey 2011: Opportunity, change and uncertainty



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Key points

- Connected devices remain one big bandwagon: More manufacturers are bringing devices to the market just to try and keep pace with rivals than are doing so for more strategic reasons.
 - For operators offering services via connected devices, gaining new users, rather than growing the usage of existing customers, is a more important motivation.
 - Despite the symbiotic relationship between content and devices, relatively few content providers saw it as very important to be associated with popular device brands, and vice versa.
 - There are big differences in the perceived value of different video services on connected devices. Traditional pay-TV services and a-la-carte retail services are considered much less important for connected devices than Netflix-style subscription services and catch-up TV.
 - Issues surrounding content rights were universally considered to be the biggest hindrances to the growth of connected devices, but survey respondents were much more divided over the extent to which technical issues would hinder growth.
 - The importance the industry places on common standards for connected devices is waning. Most respondents think they have a role to play but few believe that it will be at the expense of proprietary standards.

After numerous false starts and trips down blind alleys, the worlds of TV and broadband

Fig 1
Connected TV word cloud



Source: Informa Telecoms & Media

are finally starting to converge. The idea of connecting a TV to the Internet is, of course, not new – devices promising to do just this having been on sale for at least a decade. None of these early pioneers, of course, changed the course of TV history, with Microsoft's WebTV, launching in a blaze of glory and bombing almost as quickly, being perhaps the most high-profile letdown.

Today, though, we are a long way from those heady days. All the giants of the Internet and TV worlds have a connected-TV strategy. More or less every major content and service provider in the world has either launched a connected service or device, or is considering doing so. It's a cliche, but TV in 2011 feels like it is on the cusp of some of the most fundamental changes it has undergone in its short history.

Yet quite how and when those changes will occur, and who the main benefactors will be, remains very much up for debate. Therefore, Informa Telecoms & Media carried out a survey to assess the industry's views on how the connected-TV landscape will develop.

Informa put questions to the great and the good of the CE industry, service and content providers, operators, vendors and others involved in the TV value chain.

The results, profiled in this report, are mixed. They paint a picture of an industry sure that change is on the horizon – and sees big rewards for those that succeed in this environment. But, equally, the results highlight an industry unsure of how to get to this Promised Land – and of how the spoils will be shared once they get there. As the word cloud – made up of words that respondents said they associated with connected TV – shows (see fig. 1), perhaps the key word in all of this is “uncertainty”.

Motivations for offering devices: Connected TV remains one big bandwagon

It's not difficult to find market trends that justify the launch of connected devices. Yet it is clear from Informa's survey that many players are simply launching connected

Fig 2
Motivations in offering connected devices



Note: Chart shows the percentage of respondents that answered "very important" to the following question: "How important are the following factors to you, or your customers, in offering these services?"

Source: Informa Telecoms & Media

devices in order to keep pace with a few companies that are truly leading the field. Over three-quarters of respondents said this was a very important factor in launching a device, the most popular justification given by some distance (see fig. 2). One glance at the current line-up of connected-TV products adds credence to this finding: While there are a number of innovative and compelling products, there are also a large number of "me-too" propositions. Rivalry within the CE industry is also famously intense. As one content provider succinctly put it to Informa, "the one thing Samsung fears the most is LG, and the one thing LG fears the most is Samsung".

The next three most popular motivations were to sell more devices (63%), sell

devices to new users (57%) and earn new revenues from content sales (56%). The CE industry is one of low margins, and it is clear that several players see the advent of connectivity as a chance to diversify their revenue streams and, potentially, compete more adeptly with those that can get by on razor-thin margins.

Only 44% claimed that reducing churn from another product was very important: This is a contrast to a number of operators that claim that a key motivation in launching next-generation set-top boxes is to reduce churn. Fewer still (42%) claimed to be trying to sell higher-end devices than they do today. This is confirmation of the fact that connectivity will soon be a standard feature included in devices, and that manufacturers

won't be able to use connectivity in and of itself as a differentiator in the long term.

Relatively few device manufacturers claimed that partnering with big content providers' brands was important to them. This was a surprise to Informa: The reality is that device manufacturers need big content brands like Netflix and iPlayer on their platforms to attract consumers to their products. The cynic might point to a hubris-like mentality on the part of the device manufacturers that they now believe they are the new gatekeepers in the world of connected devices. Yet it is just as likely to be a reflection of the fact that the inclusion of the biggest services is no longer a differentiator for device manufacturers – Netflix and the BBC iPlayer are now on over 100 and 30 devices, respectively. Arguably, the bigger battle for device manufacturers is not securing these services, but that other services, while still popular, remain slightly further down the pecking order.

This is an extract from an Informa research project into connected TVs. The full research and analysis is available to clients through the Broadband channel of the Intelligence Centre.

CE and pay-TV firms struggle to meet in the middle



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Key points

- CE manufacturers are partnering with pay-TV providers to either build custom set-top boxes or have applications launched on their connected TVs.
- Pay-TV providers are eager to embrace new devices both to extend their services beyond the living room and to add greater functionality such as selected OTT services.
- With their latest hybrid set-top boxes, TiVo and Logitech offer two very different visions of what hybrid can be: closed and controlled, or open and uncontrolled.
- Manufacturers are more interested in selling connected-TV services as the primary TV service but pay-TV providers wish to use it as the second screen in the home.

Overview

There has rarely been a conflict of interests between CE manufacturers and pay-TV operators, the products of each complement one another. However, the emergence of connected TVs and other devices is bringing a great deal of agitation into this once almost symbiotic relationship.

There is much at stake for both sides. CE manufacturers see partnering with pay-TV operators as advantageous but are unsure as to the best means of achieving this. Some see the connected TV as the best device as it will enable them to charge pay-TV operators for appearing on their devices and considerably improve the content that these devices can offer. Pay-TV operators are also keen to partner with CE manufacturers,

Fig 1
Alternative connected device strategies

	STB	Hybrid STB	Home Gateway	Connected TV (apps)	Connected TV (RVU)
Provider	Vendor	Vendor	Vendor	CE manufacturer	CE manufacturer
Content	Pay-TV	Pay TV, selected OTT	Pay TV, selected OTT	Pay TV, OTT services	Pay TV, OTT services
Pay-TV control	Complete	Complete	Complete	Restricted	Part
Functionality	Linear TV, VOD	Linear TV, VOD, Apps	Linear TV, VOD, apps, media sharing	Linear TV, VOD	Linear TV, VOD, apps

Note: All functionality relies on there being a home gateway

Source: Informa Telecoms & Media

thinking that they can either provide better set-top boxes (STBs) than traditional vendors or that connected TVs will reduce their reliance on the STB altogether.

Traditionally, pay-TV operators have relied on the STB to deliver their content to the TV. However, this device is set to be replaced by one of three devices: a hybrid STB which can offer pay-TV and OTT content; a home gateway which can act as both an STB and media server; or the connected TV which will also be able to provide both OTT content and pay-TV content but which pay-TV operators will have much less control over (see fig. 1).

Hybrid, a smarter set-top box

When TiVo launched its first STB, it set itself apart by its PVR functionality. Increasingly this feature is becoming standard, reducing the attractiveness of the original TiVo products. This has been reflected in the company's new product line-up, which offers more OTT services, and a stronger push to partner with pay-TV providers (see fig. 2).

Logitech entered the market with its Revue STB, which is based on Google

TV middleware, in an attempt to stand out in a crowded market. This made the product attractive to satellite player Dish which wished to use the new platform to offer an improved premium product to its subscribers. The increased functionality it offers – searching online content, the PVR, and pay-TV linear channels – sets it apart from a standard Dish subscription. The user is not only paying for more content but a better means of accessing it.

These two different hybrid STBs offer very different visions of what the end user wants. TiVo's box offers a greater level of control over what OTT content can be accessed as it can only be included by TiVo. With its GoogleTV middleware, the Revue offers all the Internet content that it is possible to access. At present, the Revue fails to offer a great deal of the premium content due to disagreements between the content providers and Google. TiVo in the UK does not do so due to the limited number of services that it could offer which Virgin does not already provide. So far, the TiVo box has had the greater success at winning more pay-TV operators than GoogleTV and therefore the Revue. Pay-TV operators remain hesitant to embrace GoogleTV as they are worried about losing complete control over their

Fig 2
Recent TiVo pay-TV client wins, Jun-10 to Jan-11

	Company	Country	Detail
	ONO	Spain	To be launched in September 2011
	Canal Digital	Norway	To be announced
	Virgin	UK	Deployment in 1H11
	Charter	US	No date given for launch

Source: Informa Telecoms & Media

relationship with the user and are unsure as to Google's ambitions.

Advanced gateways can bring pay-TV to new screens

In 2010, Liberty Global announced that it was developing the Horizon gateway, a so-called next-generation gateway, in conjunction with Intel, Samsung and NDS. Although no launch dates have been disclosed, Liberty Global has announced that it will launch Horizon in Europe under its UPC brand starting in the Netherlands and then Switzerland.

Liberty Global has boasted that Horizon's user interface (UI) will allow users to seamlessly search and access content

from various sources – PVR, local network, online, linear TV and VOD services – to the point where they would not know where the content has come from. The aim seems to be for Horizon to become the de-facto destination for all the content that users would wish to use.

With the Horizon gateway, Liberty Global continues to control the subscriber relationship. It also allows Liberty to offer a multiroom multiscreen service to its premium customers. However, the home-gateway approach for achieving these aims is limited. It restricts usage by mobile devices to just within the home. Any attempt to offer such a service will require investment in new billing systems which will need to be built and video to be transcoded specifically for each device.

One advantage of offering an in-home multiscreen solution via a home gateway is the improvement it brings to the quality of the network in the home. Horizon is likely to come with standard N Wi-Fi and 1Gbps Ethernet ports. This is an important consideration for devices such as tablets and laptops which rely on Wi-Fi to connect to the network. It should ensure enough bandwidth within the home to consistently stream HD video.

Samsung has plans to sell over 30 million connected TVs in 2011. It is the world's largest manufacturer of connected TVs, accounting for over a third of all shipments in 2010.

It is hard to see how Horizon, which will earn much lower revenues per device than a connected TV, will complement those sales. It could be argued that Horizon may undermine usage of connected TVs, as its users will already have a great deal – if not more – of the functionality that connected TVs offer.

This is an extract from an Informa research project into pay-TV players. The full research and analysis is available to clients through the Broadband channel of the Intelligence Centre.

VDSL-from-the-central-office: the easiest NGA option for both incumbents and unbundlers



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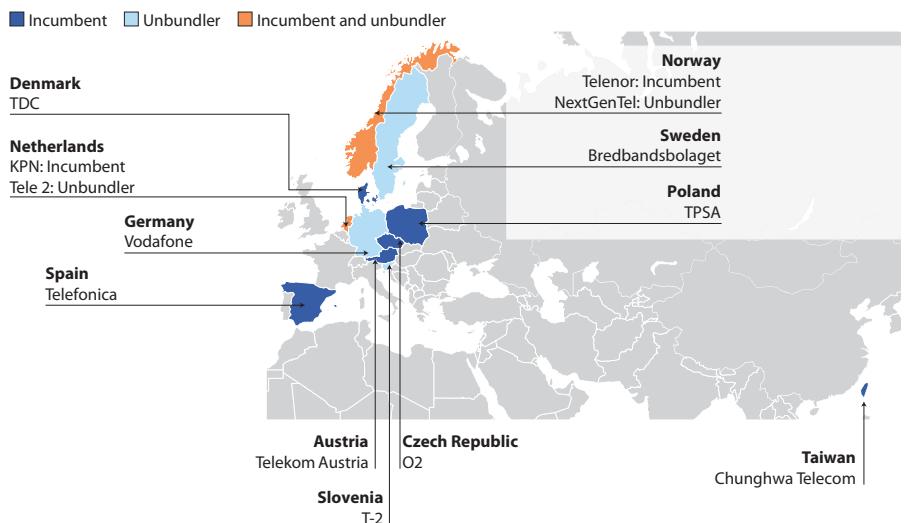
Key points

- A growing number of incumbents and unbundlers are proving that you don't need fiber to compete – and win – in the next-generation broadband market by deploying VDSL-from-the-central-office (VDSL-FTCO).
- Copper-loop length is a key factor in choosing whether to deploy VDSL-FTCO. Beyond a certain loop length, performance is no better than via ADSL2+.
- Cost is VDSL-FTCO's strongest suit, with little work needing to be done to upgrade ADSL2+ subscribers.
- Time-to-market is also the best of any next-generation access technology, giving a rapid boost to an incumbent or unbundler losing subscribers to cable.
- But if demand for higher speeds is accelerating, fiber-to-the-cabinet/node (FTTC/N) or fiber-to-the-home/building (FTTH/B) might be more advisable.
- Because of loop lengths and the extent of existing FTTH/B deployments, Western Europe and, to a lesser extent, Eastern Europe will be the key VDSL-FTCO markets.

Overview

VDSL-from-the-central-office (VDSL-FTCO) is becoming an important network strategy for both incumbents and alternative operators, with rollouts becoming commonplace (see fig. 1). Instead of rolling out fiber between the exchange and the subscriber's home, operators continue to use the existing copper network. This is important, because

Fig 1
Selected VDSL-from-the-central-office deployments



Source: Informa Telecoms & Media

it can save large amounts of money when compared with rolling out FTTH/B or even FTTC. And operators are increasingly seeing that it is proving difficult to make subscribers pay more for the superfast speeds that FTTH/B can offer. VDSL-FTCO could prove an attractive option for operators looking to boost their speeds, though not to the extent that FTTH/B rollouts would, without breaking the bank.

VDSL-FTCO dependent on loop lengths

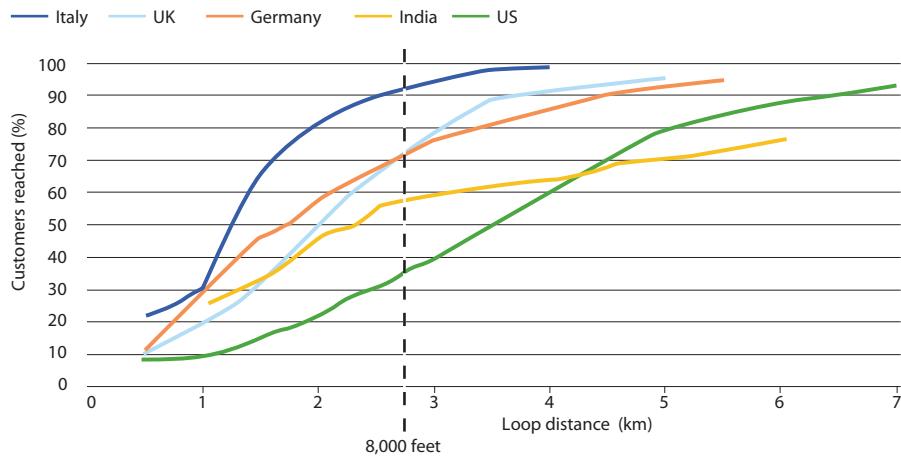
Copper-loop length is absolutely critical for an operator in deciding whether it is worth pursuing a VDSL-FTCO strategy. If the loop length is too long, performance will be little better with VDSL-FTCO than with ADSL2+. In such a scenario, operators may choose to shorten the copper loop by deploying FTTC.

Telekom Austria's deployment of VDSL-FTCO demonstrates the importance of

loop lengths. The operator is deploying VDSL-FTCO to a maximum of 1,500m and, according to vendor Alcatel-Lucent, VDSL2 will provide no improvement in speeds over ADSL2+ from loop lengths of around 2,000m. In addition to loop lengths, cable gauge, or the thickness of the copper wire, will also be an important factor in determining at what point VDSL2 offers no performance benefit over ADSL2+.

At shorter loop lengths, there will also be questions about whether this technology is really worth investing in, as downstream bit rates will improve but will not be significantly greater than those offered via ADSL2+. Therefore, an operator such as NextGenTel in Norway offers VDSL-FTCO to a maximum copper-loop length of 800m. There is some variation here, with O2 Czech Republic offering VDSL within 1.3km of an exchange. Whether an operator has already upgraded to ADSL2+ will be a factor in determining whether it is worthwhile to invest in VDSL-FTCO.

Fig 2
Copper-local-loop lengths by selected country



Source: IEEE

There is also a large variation in loop lengths between regions. Slovenia has average local-loop lengths of around 700m, compared with 1500m in Sweden and Denmark. Even in Western Europe there are significant variations, with Italy having considerably shorter loops than the UK or Germany (see fig. 2). Broadly speaking, loop lengths are longer in North and Latin America and tend to be shortest in Europe, making VDSL-FTCO a more viable strategy in this region.

of households with VDSL-FTCO by end-2010. O2 Czech Republic was also able to cover large parts of the country with the technology in a short time.

The lack of civil infrastructure work also significantly reduces the cost of rollout. For example, a benchmark figure might be that VDSL-FTCO costs only 20% of an FTTCN rollout. One of the few costs incurred is in changing the line cards on DSLAMs in the central office.

Time-to-market and lower costs are major plus points

VDSL-FTCO has a massive advantage because it requires no civil infrastructure work, assuming that fiber is being fed into the exchange, and this drastically reduces the time-to-market of such a rollout. For example, on its launch of VDSL-FTCO in April, Telenor in Norway already had 400,000 homes passed, or about 17% of the Norwegian total, and it plans to double this coverage by the end of the year. In Austria, Telekom Austria had already passed 38%

Technology can make sense for incumbents and unbundlers

FTTC/N deployments have and will continue to be almost exclusively the preserve of incumbent operators. Because FTTC/N nodes are small, any operator must have a high market share to justify the expense of such a rollout, something that is unlikely for alternative players, given the presence of incumbent and infrastructure competition from cable players.

VDSL-FTCO has a different dynamic: The higher the number of subscribers served from an exchange, the less risk in investing in the technology, because there are more potential and actual customers. In practice, there have been a number of deployments of VDSL-FTCO from alternative operators and DSL unbundlers in Western Europe. The technology even presents an opportunity for unbundlers to compete favorably on speeds with the incumbents. For example, until Telenor's recent launch of VDSL-FTCO, NextGenTel was offering higher speeds than the incumbent in those exchanges where it was using VDSL-FTCO.

Deploying VDSL-FTCO can also help unbundlers by preventing their business models from being disrupted, because rolling out VDSL-FTCO is an alternative to either FTTH unbundling or bitstream. For example, Tele2 in the Netherlands continues to use the last-mile copper network of KPN, but its deployment of VDSL-FTCO enables it to offer higher speeds without requiring it to pay more to unbundle the FTTH network rolled out by Reggefiber.

This is an extract from an Informa research project into the global provision of VDSL. The full research and analysis is available to clients through the Broadband channel of the Intelligence Centre.

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