

# THE NEW RULES OF OPENNESS



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key messages

# KEY MESSAGES

- The often confusing discussion around "open" and "closed" needs a fresh perspective and renewed objectivity. The notion that everything that is open brings benefits to consumers, markets and the economy at large, while closed has a negative effect does not hold.
- Most systems that are viewed as open frequently have significant closed elements to them. Completely open systems do not create sustainable economic value, and closed systems have realised mass consumer acceptance and pioneered innovation.
- For a constructive discussion on openness in the context of competition, innovation and economic growth, a holistic view of key industry assets along the entire digital value chain and their openness levels is required – a value chain perspective.
- By taking this approach, it becomes evident that the converged telecommunications and media industry is built on different openness levels which reflect the strategic positions that the prevalent business models have built up around their key assets for value creation.
- Five typical business model types can be observed that demonstrate the different openness degrees of the industry: *the distribution-centred model, the aggregation-centred model, the search-centred model, the device-centred model and the community-centred model*
- All of these business models employ a mixture of more open and more closed elements, where the most important strategic assets are often the most closed ones. A company can never be entirely open or closed, as these extremes rarely exist – merely different degrees of openness.
- Employing their different openness levels, the five business model types collectively generated revenues of more than €360 billion in Europe (EU25) in 2009.
- In terms of revenues, the distribution-centred model is by far the largest, accounting for over €260 billion of the total. Highest growth in the past five years, however, was in search (49% growth), communities (35%) and devices (15%). Revenues of distribution decreased by 1%, while content aggregators showed moderate growth of 3%.
- The high-growth business models, although growing from a smaller base, indicate a change in dynamics of the industry and raise new questions around openness, the importance of physical versus non-physical assets, type of market access and consumer choice.
- Companies dynamically adjust the openness levels of their assets to seize new business opportunities, drive innovation and react to technology disruption, competition and changing consumer behaviour – as well as to regulatory pressure.
- Openness shifts are reflected in three key "strategic battles" that are having a profound impact on the entire industry:
  - **The battle for content navigation** – which will be the primary gateway for consumers to digital content?
  - **The battle for consumer access** – what will be the terms of access to consumers over distribution networks?
  - **The battle for consumer data** – who will control the rich consumer data and monetise it through advertising and commerce?
- These battles are now being waged on different terms than in the past, as the services involved have become global in scale and are decoupled from distribution networks. Those networks, in turn, are facing competition from other infrastructure players as well as new ecosystems around devices, over-the-top platforms and cloud-based environments.
- The key assets rising in importance as drivers of innovation and growth in the digital economy are changing and include content rights, software platforms, navigation services and consumer data. Access to these assets is already critical for large segments of the growing digital economy and will become even more so.
- As the battles unfold, new strategic priorities of the business model types are taking shape. Many of them are seeking to extend their business and strategic positions to new parts of the value chain, leveraging different assets and different openness levels.
- The first imperative for regulators and policy makers is to take the entire digital value chain with its multitude of openness levels into account when designing policy and regulatory frameworks.
- Once this broader view is established, a balance must be found between open environments and the need for closed elements in every business model necessary to incentivise investment, innovation and creation of value.
- By itself, enforcing openness is not always the best way to drive innovation, help sustain growth or promote effective competition.
- Regulation should focus on areas where the outcome of the strategic battles and openness shifts is likely to create a form of closedness that may have negative effects on the industry or the consumer.
- Negative closedness is when competition is structurally hindered by excessive limitation of access to key assets, and when strong market positions of companies lead to consumer lock-in effects without adequate alternatives.
- Regulators should intervene only when market dominance becomes abusive and competitive market forces themselves are not likely to resolve the situation on their own.
- In a fast-paced industry, game changers must be recognised and regulators must take a fluid approach to when to intervene – and when to step aside.



executive summary

# EXECUTIVE SUMMARY

## Open versus closed: An ongoing industry and policy debate

The debate on how to create the optimal conditions for the information, telecommunications and media industry in Europe is nothing new. The terms "open" and "closed" have been central to this discussion for the past 20 years, as policy makers and industry leaders have striven to create the levels of market access that will foster innovation, competition, consumer choice and economic growth.

Regulatory decisions revolving around "openness" have had a substantial impact on the industry and consumers. In the 1990s, third-party telephony providers were given regulated open access to incumbents' physical networks, giving consumers in Europe a choice of competing telephony providers for the first time. With the rise of the public Internet, policy makers advocated open standards to make proprietary Internet services interoperable, which led to a virtuous circle of value creation as the number of individuals and companies developing, using and connecting services grew at exponential rates.

Now, with its "Digital Agenda for Europe" initiative in 2010, the EU is reconfirming its long-term commitment to fostering open market environments and contemplating how to apply the concepts of "open" and "interoperable" in an entirely new context of convergence, Web-based competition and global digital ecosystems. The debate is as important as ever, but it has now reached new levels of complexity that call for a careful, objective and balanced discussion.

## Challenging prevailing perceptions: Is open good and closed bad?

In today's highly complex environment, the often confusing discussion around open and closed needs a fresh perspective and renewed objectivity. Too often, everything called open is assumed to be a generally positive good, in that it will bring benefits to consumers, markets and the economy at large. At the same time, closed usually has a negative connotation and is assumed to have the opposite effect. In the current discussion, companies themselves are often freely assigned to either the open or the closed bucket. Is it then true that Google is open and good and Apple is closed and evil?

*Is it then true that Google is open and good whereas Apple is closed and evil?*

Discussions between pro-open and pro-closed advocates in the press, user communities, technology blogs and political debates are becoming increasingly entrenched and polemic. As important as these concepts are in a world of smartphones, app stores, networks, content platforms and the public Internet in general, there is actually little or no clarity or consistency in what is actually meant by the terms "open" and "closed." Do they refer to a consumer perspective or a businesses context? Is the discussion about access to public information on the Web, availability and portability of content, interoperability of devices and platforms or access to infrastructure and choice of service providers? Or is it simply about something being given away for free?

It is therefore obvious that the many discussions that are currently high on the agenda of

various industry and policy stakeholders would benefit from a more consistent definition and an objective discussion of the topic. Responding to this need, the following study introduces a definition and framework for looking at openness in a more structured manner. The study will address the following questions:

- **What is openness? How truly open or closed are various business models and companies?**
- **What is the value of open? Is it more beneficial for value creation and innovation when something is more open or more closed?**
- **How should different stakeholders respond? How are openness levels evolving, and what relevance does that have for different stakeholder groups?**

## Defining openness along the value chain

In the current multimedia convergence space, few commercial industry participants act solely within the confines of their core segment of the digital value chain. In addition to their core transport activities, network operators are also active in content aggregation, enabling platforms and retail. Commercial and public broadcasters have established their own online content aggregation and video-on-demand platforms, while device manufacturers have also started aggregating and selling digital content. Thus, no discussion of openness in the context of competition, value creation and innovation can be limited to stand-alone observations of individual parts of the industry value chain. Instead, a holistic view of the activities along the different value creation steps – a value chain perspective – is required.

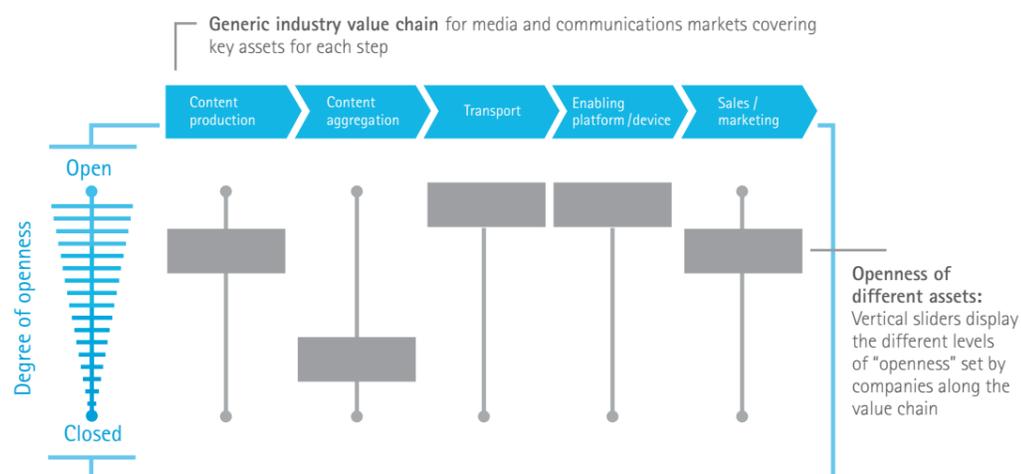
By looking at the openness of business assets in a consistent way along the whole length of the value chain, a picture emerges that enables a differentiated view of the actual openness of business models. When taking this differentiated view, it soon becomes clear that there are more shades of gray to the openness profiles of most companies than can be extracted from the current news headlines. All business models are built around a combination of assets that have different levels of openness in different segments of the value chain depending on what role the asset plays and the perspective taken. Strategic advantage created by asset owners around their key assets is one of the preconditions for value creation. These advantage positions are protected through economic, content or technical conditions that the asset owners determine for third parties and consumers who seek access to those assets.

*When taking this broader view, one realises that there are more shades of gray to the openness profiles of most companies than can be extracted from the current news headlines.*

The openness framework provides a perspective that unites two key elements of the discussion on openness:

- **A holistic view of the media and telecommunications value chain**
- **A definition of openness in terms of the degree of third-party access to a certain asset that does not belong to him; here, access means the ability to make use of an asset to achieve business objectives.**

The openness framework



## The value of openness – how openness can impact innovation and growth

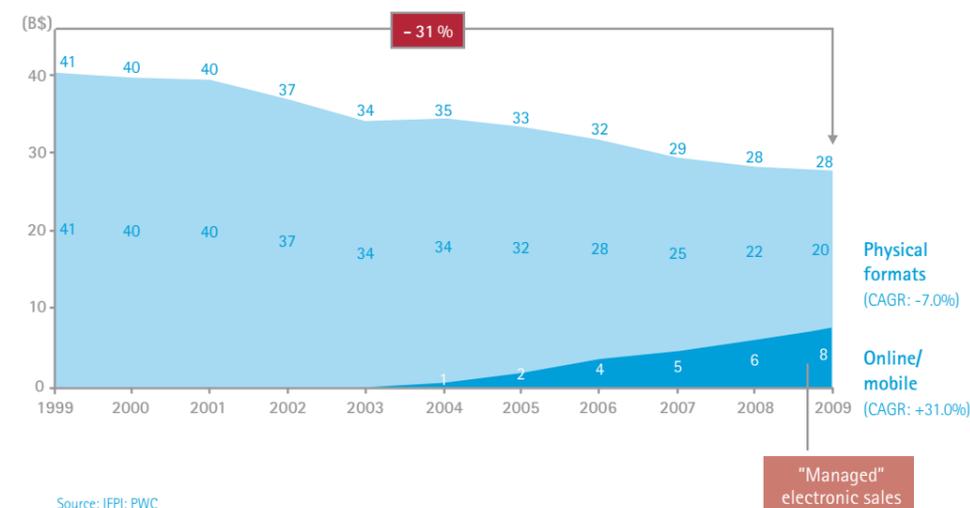
Can an open common standard drive an industry from virtually no revenues to \$300 billion in just 10 years? Can a different kind of openness cause another global industry to lose a third of its value in the same timeframe? Does open create more value than closed? A fundamental question in the openness debate will always be that of how open or closed can create or destroy value for companies, industries and consumers. It is evident that businesses built around total openness cannot create sustainable economic value or growth. When a business model is completely open, it lacks the vital strategic advantage for value generation and therefore can only function on the basis of either sponsorships, donations or – as in the case of digital piracy – theft. Just as completely open assets can reduce value, business models that are perceived as closed have repeatedly created

great economic value, driving industry innovation as well as consumer benefits.

*It is evident that businesses built around total openness cannot create sustainable economic value or growth.*

A powerful recent example of what can happen if something becomes too open is the evolution of the music and the newspaper industries over the past decade. Both industries experienced an extreme form of openness as content became easily reproduced and distributed for free over the open Internet. In just 10 years, the music industry lost 30% of its value. Sales of digital music only started to increase again when a level of closedness was applied to the distribution of music through legal music platforms. Similarly, the newspaper industry is currently trying to create new strategic digital positions to halt the downward spiral of revenue development.

Revenue development of the global music industry



Other types of openness, however, can be extremely beneficial to companies, industries and consumers alike. Despite a number of openness casualties, the generally positive impact of many open and interoperable standards has been significant. Large-scale access to and use of the IP protocol, for example, has driven the enormous growth of the Internet economy and any number of innovative Web-based business models. In the UK alone, the Internet economy is estimated to be worth around £100 billion and directly employs around a quarter of a million people.<sup>1</sup> In mobile telecommunications, the introduction of common standards has also helped drive both economic and consumer value on a large scale.

*Businesses leveraging open standards all create their own strategic points of leverage on top of the open elements, which enables them to create value and growth.*

The common open GSM standard, for example, helped drive the mobile communications industry from virtually no revenues to around €300 billion globally in just 10 years. The standard drove down costs and increased consumer penetration much faster than earlier proprietary national technologies. In this context, however, it is important to note that growth and innovation based on access to open or interoperable technical assets such as the GSM or IP standards are not the same thing as complete openness. Businesses using these open standards all set their own

<sup>1</sup> The Connected Kingdom, a BCG and Google study, November 2010

strategic points of leverage on top of the open standards, which enables them to create value and growth. Vendors of open-source software like Linux, for example, build proprietary service and subscription models on top of the open-source software – a strategic position that generated an estimated \$4 billion in revenues in 2009<sup>2</sup>.

## The business models of openness

There are countless examples of companies, standards, technologies and business models that are either open or closed to a greater or a lesser extent. Some of them have created value, others quite the contrary. The notion that a company or a business model could be entirely open or closed is misleading. The fact is that the extremes of open or closed rarely exist, merely different degrees of openness.

*The fact is that the extremes of open or closed rarely exist, merely different degrees of openness.*

These different openness levels can be clearly observed when examining some of the typical industry business models today. In different parts of the value chain, companies build strategic advantage around specific tangible or intangible assets that serve as the foundation of their value creation. Although there can be any number of openness levels and combinations, five distinct business model types can be commonly observed today:

- **The distribution-centred model** builds its competitive position around the performance

and capacity of a physical transport network (e.g., Telefónica, UPC, Vodafone)

- **The aggregation-centred model** derives its strategic advantage from the valuable content rights it holds and its branded aggregation platforms (e.g., Sky, BBC, RTL)
- **The search-centred model** generates its success from its ability to navigate through digital content as well as being an entry point to the Web (e.g., Google, Bing)
- **The device-centred model** draws its strategic advantage from superior design and functionality that provides access to digital content (e.g., Apple, Nintendo, Samsung)
- **The community-centred model** derives its power from the scale and network effects of a global user base (e.g., Facebook, YouTube, Twitter).

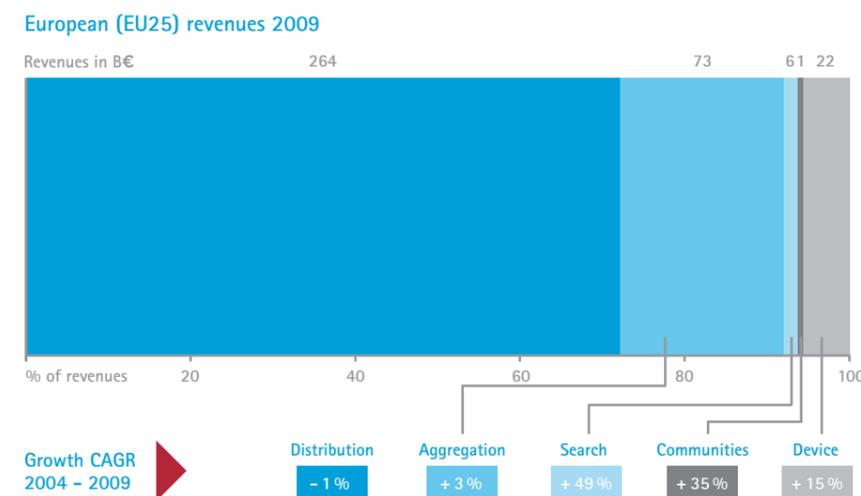
The openness levels of the different companies' assets depend on the business model and revenue sources they employ. The perceptions of a company's openness are often driven by how open its services appear to be from the point of view of the end consumer. A closer look reveals that virtually every business model contains elements that are less open than the part that is open or free. For a "free" TV channel, this applies to the content rights it holds, as those rights are the foundation on which it attracts viewers and advertising revenues. A free search Web site still controls its closed computing infrastructure, including its search algorithms and its underlying data. A business model based on advertising revenues like free TV, search and social network-

king communities will typically have a different openness profile than a business that is mainly dependant on direct consumer payments, such as cable television, mobile telephony or consumer devices. But all of them have one thing in common: They all apply different levels of openness to their assets.

*Although each of the different business models may have its own typical openness levels, in every case they are dynamic and constantly evolving.*

Although each of the different types of business models may have its own typical openness levels, in every case they are dynamic and constantly evolving. Companies adjust the openness levels of their assets for several reasons – competition dynamics, technology changes and consumer behaviour, for example, or in response to regulatory pressure. Virgin Media's incorporation of the BBC iPlayer into its cable platform is an example of a strategic adjustment of openness levels – in this case, the decision to open up to online content. Apple's relaxation of the conditions set for its platform development tools, allowing for Flash, was an adjustment toward openness that was influenced by potential regulatory intervention.

Revenue and growth of the business model types



Source: Company reports; EITO; OBS; Magna Global; SNL Kagan; Forrester; Ovum; eMarketer; Internet World Stats; Gartner; Juniper; IDC; OANDA; BCG market modeling

Employing their different openness levels, the five business model types collectively generated revenues of more than €360 billion in Europe

in 2009<sup>3</sup>. In terms of revenues, the distribution-centred one<sup>4</sup> is by far the largest, accounting for more than €260 billion of the total. The greatest

<sup>2</sup> International Data Corp. Worldwide Open Source Software 2009-2013 Forecast

<sup>3</sup> EU25 revenues of business model types defined for the purpose of this study. Revenues are not an exhaustive representation of the size of the European ICT, telecommunications and media industry

<sup>4</sup> TV Access, mobile and fixed-line data/voice revenues

revenue growth in the past five years, however, were achieved by "new" industry players active in search (49% growth), Web community platforms (35%) and device sales (15%). During that period, revenues of distribution-centred companies actually decreased slightly, declining by 1%, while content aggregators showed moderate growth of just 3%.

*The highest revenue growth of the last years came from the „new“ industry players active in search (49%), Web community platforms (35%) and device sales (15%)*

The high-growth segments, although they are growing from a smaller base, indicate a significant change in dynamics of the industry. Many of these highly innovative business models are global in scale and represent completely new Web-based ecosystems that span fixed-line, mobile and cloud-based platforms – and operate independently of the underlying physical infrastructure. These developments are changing the balance of power within the industry and are raising new questions with regard to the value of openness and the importance of various assets, market access and consumer choice.

## Openness developments

Significant shifts in strategic positioning and openness levels are taking place, with the result that three key "strategic battles" are having a profound impact on the entire industry:

- **The battle for content navigation.** All of the typical business models are pursuing the same

strategic position of being the primary gateway for consumers to digital content

- **The battle for consumer access.** The growth of Web-based business models and Internet traffic raises fundamental questions about the terms of access to consumers over transport networks
- **The battle for consumer data.** The accelerating cross-platform collection and monetisation of consumer data creates global powerhouses in advertising, content and commerce.

All industry contenders are participating in these developments to a greater or lesser extent as they seek to expand their reach across the value chain and strengthen their strategic positions. These battles are now being waged on different terms than in the past, as the services involved become global in scale and are decoupled from the distribution networks. Those networks, in turn, are facing competition not only from other infrastructure players but also from the new ecosystems being built around mobile devices, over-the-top platforms and cloud-based environments.

*These battles are now being waged on different terms than in the past, as the services involved become global in scale and are decoupled from the distribution networks.*

As a result, the key assets now rising in importance as drivers of innovation and growth include content rights, software platforms, navigation services and consumer data. Access to these assets is already critical for large segments of the growing digital economy and will become even more so as incumbent industry players incre-

asingly become dependent on new types of assets to remain competitive and unlock new revenue sources associated with innovative value-added services. The battle for these assets can already be observed on a global scale; leading platforms, including Google and Facebook, regularly adjust the interoperability of their services and sometimes even strategically restrict each other's access to their valuable data<sup>5</sup>. The large US broadcasters, ABC, NBC and CBS, are also flexing their muscles and refusing to make their content available to the search-based TV platform Google TV. As markets converge further and companies expand their reach into each other's business environments, traditional asset holders are becoming third parties to the new assets that will become increasingly necessary to innovate and create value in the future.

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This new industry balance is also reflected in the expected rates of growth of the different industry segments over the next five years. Social networking is expected to grow by almost

40% a year, while search- and device-centred businesses are expected to grow by 12% and 17%, respectively. Overall, aggregation revenues will increase by more than 5% annually, driven by the rapid growth of online content, while distribution revenues are expected to remain stable at less than 1% annual revenue growth.

The somewhat asymmetric revenue growth across the five segments reflects a crucial underlying development – the explosion of IP traffic, which will quadruple by 2014<sup>6</sup>. Increasing the quality and capacity of transport networks will be a must if online content providers are to grow their businesses and deliver quality service to their customers. Despite strong infrastructure competition, the growing need for transport capacity will strengthen the strategic position of the distribution-centred model and spur new services and revenue schemes to accommodate the growth needs of the Web-based business models and to enable future infrastructure investment. These developments could lead to differentiated transport access conditions between fixed-line and wireless network environments, a position currently being advocated by leading network and Internet service providers<sup>7</sup>. At the same time, network providers' strategic position will be counterbalanced by net neutrality principles aimed at preserving an open Internet, which will impact openness levels in IP transport.

<sup>5</sup> At the beginning of November 2010, Google stopped allowing Facebook to search its users' Google contacts and match e-mail addresses with platform profiles for friend suggestions.

<sup>6</sup> Cisco Visual Networking Index, Forecast 2009–2014

<sup>7</sup> For example, "A joint policy proposal for an open internet" by Google and Verizon from August 2010

## Navigating the new openness landscape

The emerging developments and shifts in competitive dynamics are currently forcing the creation of new strategic priorities, not only for all industry players, but also for policy makers and regulators. All of the five business models are seeking to protect their existing assets, gain access to new ones and balance their openness levels to achieve a new equilibrium.

- **The distribution-centred model.** The key strategic objectives for distribution players will be to secure their navigation position through a superior user interface and cross-platform capabilities in the face of global platform and device competition. Critical elements for success will be the ability to leverage direct customer relationships to deliver tailored transactional services complemented by advertising revenues, and to strengthen their position around network access with advanced enabling service capabilities and quality of service. Key openness shifts will be around IP capacity, which will become differentiated based on quality and speed, and around content platforms that will tend towards greater openness.
- **The aggregation-centred model.** Traditional aggregators will have to leverage their brands and establish their own online distribution outlets with direct customer relationships. Securing their position through alliances around new digital platforms and by getting shelf space on "hot" devices will become strategically important, as will the development of new advertising capabilities and business models around multi-screen and online content distribution. Access to content will become ubiquitous in terms of

access over multiple platforms and devices, but the content assets themselves will not become more open towards third parties in the value chain.

- **The search-centred model.** Search companies will seek to further secure multichannel service relevance by intensifying diversification into mobile, video and auxiliary products. Search access to content will be increasingly challenged by rights holders, so securing access through deals with communities, content owners and device players will be high on the strategic agenda, as will the expansion of advertising capabilities to tap into the TV advertising value pool. The key assets of search companies are likely to become more open, driven by industry and regulatory pressure.
- **The device-centred model.** Device manufacturers will be challenged to provide complex navigation capabilities horizontally across devices, including mobile, tablet, PC and TV and content. Manufacturers will try to expand their ecosystems from a sales-based system into advertising networks and increase their efforts to secure access to popular content and services to drive device sales. The device-centred business model will continue to be relatively closed, although some relaxing of access conditions to device-based ecosystems will occur.
- **The community-centred model.** Communities will try to further expand their ability to monetise their assets for search, content navigation, advertising and commerce. They will continue to try to secure content and media partnerships to enforce the relevance of their platforms and make multiple cooperation agreements to secure placement on key devices

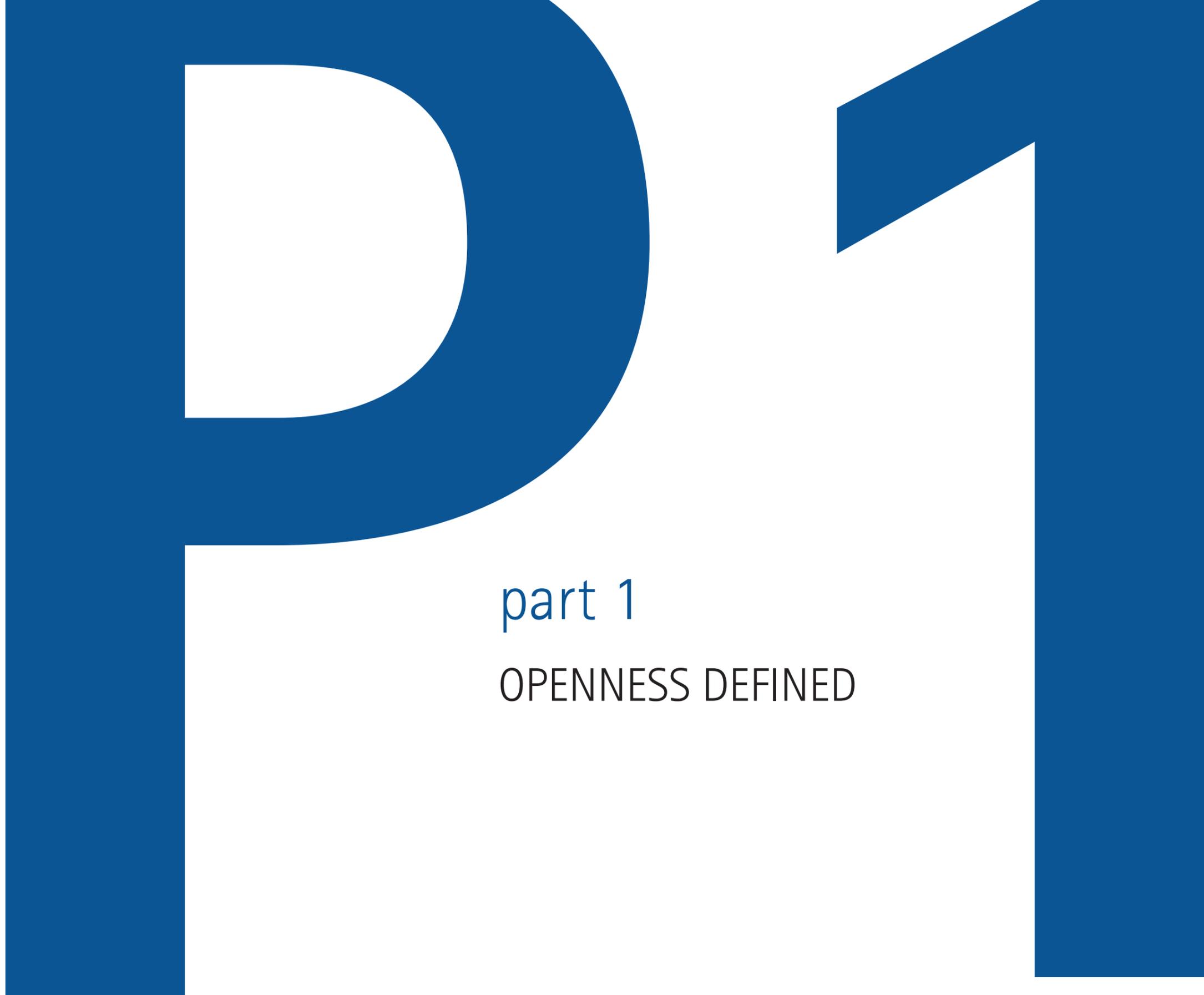
to increase reach and drive traffic to their platforms. The access of third parties to link up to community assets will remain open, but the increasingly valuable data and advertising platforms will continue to be subject to lower levels of openness.

## Priorities for regulators and policy makers

The predominant policy objectives in the next-generation telecommunications, media and ICT markets relate to fostering industry investment to create the necessary conditions for competition and growth through innovation. The first imperative for regulators and policy makers is to take the entire digital value chain with its multitude of openness levels into account when designing policy and regulatory frameworks or defining relevant markets. Once this broader view is established, new equilibriums will have to be found between open environments and the need for some closed elements in every business model in order to create value. By itself, enforcing openness is not always the best way to drive in-

novation, help sustain growth or promote effective competition. In a fast-paced industry, game changers must be recognised, as must the fact that openness levels are being adjusted dynamically in response to competitive pressure, technology disruption or consumer behaviour. Regulators must take a fluid approach to when to intervene – and when to step aside. Furthermore, regulation should focus on those areas where the outcome of industry developments is likely to create a form of closedness that may have negative effects on the industry, when competition is structurally hindered by excessive limitation of access to key assets or when strategic positions of companies lead to consumer lock-in effects without adequate alternatives. Regulators should intervene only when market dominance becomes abusive and competitive market forces themselves are not likely to resolve the situation on their own.

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part 1

OPENNESS DEFINED

## OPENNESS DEFINED – Structuring the discussion

### “Open” versus “closed” – an on-going industry and policy debate

The debate on optimal market structures and business models for innovation, competition and economic growth in the ICT, telecommunications and media sector has been going on ever since the early days of the liberalisation of the telecommunications industry in the early 1990s, when the open telecommunications network provision (“ONP”) directives were established. The desired market situation, initially driven by liberalisation policies, was to be achieved through the creation of competition by regulating physical access to the telecommunications monopolies’ networks for third-party ISPs and by creating a regulated wholesale business. The so-called open access was subsequently enhanced in line with developments in network technology (local loop unbundling, bit stream access) and the business requirements of third-party ISPs.

This “service-based” competition was then complemented by “infrastructure competition,” through which investment in alternative, competing infrastructures, such as cable TV networks, was stimulated. This was achieved in part by placing divestment obligations on telecommunications incumbents that also owned cable TV networks and by privatising municipally owned, regionally dispersed cable systems. Initially, cable networks were not subject to open network provisions but rather to “must carry” obligations, under which a certain number of predefined television channels were given access to cable TV distribution capacity in order to guarantee media pluralism.

Once infrastructures developed into “electronic communications networks,” technology allowed for comparable services to be transported over both cable and telecommunications networks (voice over IP via cable, broadband Internet via cable and telecommunications networks and IPTV over telecommunications networks). This made them substitutable from an end-user perspective and caused open network provisions to cover both cable and telecommunications networks – in principle. In practice, however, these provisions are only applied to operators designated as having significant market power.

With the rise of the public Internet in the mid-1990s, discussions on openness involved the promotion of open standards in order to create interoperability among proprietary Internet services – forcing Internet service providers like CompuServe and AOL to allow e-mails to be exchanged between their subscribers. Because it operated as an open platform, the public Internet encouraged the creation of innovative Internet services, software and applications all over the world, based on open-source methods. This led to a virtuous circle of value creation through “network effects” – the result of an ever-increasing number of individuals and companies using, developing and connecting services to the public Internet.

The European Commission has a history of regulatory intervention to preserve the interoperability of software applications. Among the most notable in this regard were the European Commission’s cases against Microsoft for preventing the interoperability of Windows desktop software with rival

server software and against the mandatory bundling of the Windows Media Player with Microsoft’s Windows XP operating system, crowding out competitive media players such as RealPlayer.

Preservation of the open public Internet is a cornerstone of the EU’s next-generation broadband policy, which is aimed at safeguarding users’ rights to access and distribute information, run applications and enjoy the services of their choice. Net neutrality principles are intended to prevent network operators from deploying broadband traffic management in order to discriminate between services based on speed and quality, thereby closing markets. These principles are based on transparency and non-discrimination in traffic management for Web services over the public Internet.

With its 2010 *Digital Agenda for Europe* initiative, the EU is reconfirming its long-term commitment to fostering open market environments. Its principles include:

- Open platforms and standards to promote ICT innovation and interoperability of applications.
- Open next-generation access networks to serve as a basis for investment by telecommunications incumbents in more fibre and preserve the legacy competition of third-party ISPs over modern telecommunication broadband networks.
- Opening access to content to allow end users to access online content as effectively as offline content. This would require streamlining the currently fragmented content licensing procedures.

In response to the fast pace of innovation and market evolution in the digital economy, the European Commission is contemplating how to apply the concepts of “open” and “interoperable” to new, innovative Web-based services and business models (e.g., video and music streaming sites, video aggregation platforms, community platforms, Internet search engines, online ad networks and video telephony services). Adding to the complexity of competition in the new digital marketplace is the emergence of cloud computing and cloud platforms, which means that Web applications and Web services are becoming independent of the underlying infrastructure or physical access platform, as they can be accessed and provided over the public Internet via Web browsers. How these technologies and business models will impact the industry is still unclear. As Joaquín Almunia, the Vice President of the European Commission responsible for competition policy, puts it: “[It is] hard to predict the way these environments will develop. Some companies favour open and interoperable systems. Others develop closed environments and others navigate between the two. The markets should decide which business models prevail.”<sup>1</sup>

*“[It is] hard to predict the way these environments will develop. Some companies favour open and interoperable systems. Others develop closed environments and others navigate between the two. The markets should decide which business models prevail.”*

<sup>1</sup> Joaquín Almunia Vice President of the European Commission responsible for competition policy, “Competition in Digital Media and the Internet,” UCL Jevons Lecture, London, 7 July 2010

## Challenging prevailing perceptions – is open good and closed bad?

In today's highly complex environment, the often confusing discussion around open and closed needs a fresh perspective and renewed objectivity. Too often, everything referred to as "open" is assumed to be a generally positive good, in that it will bring benefits to consumers, markets and the economy at large. At the same time, "closed" usually has a negative connotation and is assumed to have the opposite effect. In the current discussion, companies themselves are often freely assigned to either the open or the closed bucket. Is it then true that Google is open and good and Apple is closed and evil? Both companies have more shades of gray in their openness profiles than can be extracted from current news headlines. The truth of the matter is that every company is both open and closed, depending on the assets being referred to and on whether a consumer or a business perspective is taken.

*The truth of the matter is that every company is both open and closed, depending on the assets being referred to and on whether a consumer or a business perspective is taken.*

Discussions between pro-open and pro-closed advocates in the press, user communities and technology blogs and in political debates are becoming increasingly entrenched and polemic. In the context of smartphones, app stores, networks, content platforms and the public Internet in general, it is evident that there is little or no clarity or consistency regarding what is meant by the terms "open" and "closed." Do they refer to a consumer perspective or a businesses context?

Is the discussion about access to public information on the Web, availability and portability of content, interoperability of devices and platforms or access to infrastructure and choice of service provider? Or is it simply about something being offered for free? There are many examples from the recent public debate and news articles on open and closed systems and business models, all of which demonstrate the asymmetry of how openness is perceived, and how much it depends on the standpoint taken.

### A debate on open platforms

Opinions diverge on the topic of openness when it comes to the planned Internet TV platform YouView (formerly known as Project Canvas). YouView is a UK-based initiative to create an Internet-connected television platform built on common open standards. The partners in the project – including ITV, BBC and British Telecom – plan to promote their new platform to consumers, as well as the content, services and developer communities. Set-top boxes built to YouView's open technical standards will provide access to a range of third-party services through a common user experience. Critics of the project – including BSkyB and Virgin Media – claim that public funds, filtered through BBC's involvement, are being used to create a powerful, competitive platform in the nascent IPTV space instead of a truly open consumer service. It is also argued that the venture's partners' real goal is to develop restrictive technology standards around the set-top box – while refusing to interoperate with third-party devices such as the

set-top boxes of Sky and Virgin. According to a Virgin Media press statement, "The Canvas partners have significantly exceeded their original claims to be creating a common set of open standards which could have been improved upon by others and are now intent on controlling every aspect of how people watch TV."

### A debate on open access

Asymmetry between networks that are open by regulation ("open" meaning offering mandated wholesale access or physical access to third-party ISPs) and closed is controversial in public and regulatory debates. Open market players, such as incumbent telecommunications operators, some publicly funded FTTH operators and ISPs, are calling for the opening up of cable networks in the interest of consumers and competition. Deutsche Telekom CEO René Obermann states that "Cable operators that have rolled out broadband wiring in homes should also give access to the competitors"<sup>2</sup>. In their marketing and policy messages, some open market participants criticise that the closed business models of the cable operators restrict innovation and choice. On the other hand, it can be argued that, in markets with strong cable presence, infrastructure competition has led to the highest levels of broadband penetration and speeds. In cases such as the Netherlands, where two or more networks

often compete on an asymmetrical basis, the innovation rate is high and very high Internet speeds are available to end users at competitive rates. Infrastructure competition is further acknowledged to be the best way to preserve the open public Internet and to prevent discriminatory broadband traffic management practices, since competition allows customers to switch to the most open network operator in order to get the best quality and choice in online content and Web services.

### A debate on open business models

Google is everybody's favourite example when offering an opinion on open and closed systems. The Internet search and advertising giant defines its own openness in terms of its open technology and its open handling of user information. Google argues that its open business model allows the company to succeed by understanding how quickly the Internet changes and by using that knowledge to generate innovative products. According to a Google vice president, "Open systems are chaotic and profitable, but only for those who understand them well and move faster than everyone else."<sup>3</sup> Others see Google quite differently, preferring to raise concerns about its immensely strong position in the online search and advertising space. As Thomas Hazlett, professor of law and economics at George Mason Uni-

<sup>2</sup> Telekom erhöht Druck auf Kabelnetzbetreiber, Welt Online, 8 February 2010

<sup>3</sup> "The Meaning of Open" by Jonathan Rosenberg, Senior Vice President, Product Management, Google Inc., 2009

iversity puts it, "No open platform governs. Google prices access to its engine – with its proprietary databases, secret algorithms and private global transport network – to maximise firm profit."<sup>4</sup>

The frequent differences in the perceived openness of assets, business models and even whole companies make a structured discussion of the relative virtues of openness difficult. In marketing, public policy messages and news articles, self-proclaimed open operators regularly try to put allegedly closed players on the defensive by focusing on the closedness of some of their assets. The closed operators then retaliate by noting the superior benefits to consumers of their closed products. The source of the difficulty lies in the perception that, in practice, a company or a business model could be either fully open or fully closed. These debates and perceptions automatically raise questions about the actual meaning of openness. In a converged media and telecommunication environment, answering that question is becoming increasingly complex – and increasingly important. The interplay of converged devices, global platforms, content rights, search engines, online aggregators and distribution networks make it a daunting task to gain a clear overview of what is really open, what is closed – and what the relevance of either might be.

*The source of the difficulty lies in the perception that, in practice, a company or a business model could be either fully open or fully closed.*

Clearly, the many discussions that are currently high on the agenda of various industry and policy stakeholders would benefit from a more consistent definition and an objective discussion of the topic. Responding to this need, this study introduces a definition and framework for examining openness in a more structured manner and addresses the following questions:

- **How open or closed are different business models and companies really?**
- **Is it more beneficial for value creation when something is more open or more closed?**
- **How are openness constellations evolving, and what relevance does that have for different stakeholder groups in different industries?**

## Defining openness along the value chain

In the current multimedia convergence space, no modern commercial industry participant acts solely within the confines of its core segment of the digital value chain. In addition to their core distribution activities, network operators are also active in content aggregation, enabling platforms and retail. Commercial and public broadcasters have established their own online content aggregation and video-on-demand platforms, and device manufacturers have started aggregating and selling digital content. Thus, no meaningful discussion of openness in the context of competition, value creation and growth can be limited to stand-alone observations of

single parts of the industry value chain. Instead, what is required is a holistic view of the activities along the different value creation steps – a value chain perspective.

*No meaningful discussion of openness in the context of competition, value creation and growth can be limited to stand-alone observations of single parts of the industry value chain.*

By looking at the openness of business assets in a consistent way along the entire length of the value chain, a differentiated view of the actual openness of business models emerges. Every business model is built around a combination of assets with different levels of openness at different segments of the value chain, depending on the asset's role and the perspective taken. Strategic "leverage" is typically created by the asset owner around key assets, which become the preconditions for value creation. These strategically important assets are protected through economic, content-driven or technical conditions that the asset's owner sets for third parties and consumers who seek access to the assets.

In order to better frame the openness discussion, the proposed framework includes two essential dimensions needed for a holistic, objective look at the topic:

- **The value chain dimension:** A holistic view of the media and telecommunication value chain with all the assets used to create, distribute and sell products and services, such as intellectual property, aggregation platforms, transport and devices

- **The openness dimension:** A definition of "openness" in terms of the degree of access by third parties to a certain asset that does not belong to them; here, access means the ability to make use of an asset to achieve business objectives.

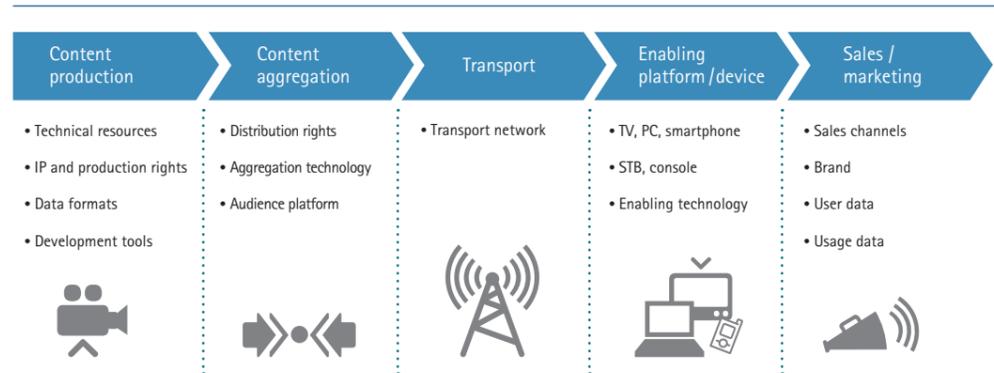
## The value chain dimension

In any industry, revenues and profits are generated based on the ownership of certain assets, including physical assets, proprietary technology and intellectual property. The party that owns the asset can grant other market participants or consumers access to it – usually for a price. Thus, the producer of a piece of video content can grant a TV channel access to that show, giving it the right to offer the show to its customers. The TV channel, in turn, can gain access to a cable network to transmit the show to the end consumer. Almost all companies are dependent on access to another company's assets in order to provide products and services to an end consumer. Music needs a playback device, aggregators need content, videos need a screen and data needs a transport network. To get a full picture of the different degrees of openness that can exist for different companies in the industry, it is necessary to examine what actually takes place from the inception of an idea to the sale of a product to the end consumer, and which assets are involved.

The value chain dimension of the framework is therefore based on a generic value chain for the media and telecommunication industry, differentiating between five stages of value creation and the assets employed at each stage (see Exhibit 1.1).

<sup>4</sup> "Is Google More Open than Apple?" by Prof. Thomas W. Hazlett, Financial Times, 15 July 2010.

Exhibit 1.1  
Key assets along the value chain



The degree of openness of the key assets needed to produce and deliver products and services can be defined at every step of the value chain. The following list includes selected key assets in the TV, data and voice communication field. An understanding of which assets are important at each step of the value chain is fundamental to the discussion of openness constellations.

- **Content production assets** include both the technical production resources and the development tools needed to create video, film, music, news, application software and other content, as well as the intellectual property rights involved. Examples include film production rights to a book, software development environments and user-generated content
- **Content aggregation assets** include the distribution rights, aggregation technology and platforms that aggregators can build to reach end users. Examples might be linear aggregation platforms (TV channels), online content platforms or search engines
- **Transport assets** involve the mechanisms by which TV content, voice communication signals and other data are sent to end users. Within the

area of physical assets (the network hardware), asset holders include cable companies, satellite companies, telecommunications incumbents, DSL and fibre network operators, mobile network operators and DTT multiplex operators

- **Enabling platforms and devices assets** enable end users to consume TV and data content or communicate with each other. They include devices like TVs, PCs, fixed-line and mobile handsets, smartphones, tablets and supporting devices like set-top boxes (STBs), including game consoles
- **Sales and marketing assets** include sales channels, brands and customer data on usage and demographics or payment information. This also includes digital retail platforms as well as physical retail outlet chains.

### The openness dimension

Using this holistic overview of the different steps in the value chain and the numerous assets that play a role in each of them, an analysis of their openness can be attempted. The most logical way to think about openness is in

terms of the degree to which one company can gain access to any particular asset that is needed to support its business model but is owned by another company. Most assets have differing degrees of openness depending on how asset holders define the conditions a third party has to fulfil to access them.

*The most logical way to think about openness is in terms of the degree to which one company can gain access to any particular asset that is needed to support its business model but is owned by another company.*

The three basic dimensions of access conditions are *economic conditions* (such as price),

*product or service conditions* (including content) and *technology conditions* (such as developer environments). These conditions can be set separately or in combination, depending on the asset holder's own business model imperatives and strategic business objectives, and on whether the third party is seeking access as a competitor or as a business partner. The level of openness of an asset can be defined as the accumulation of access conditions; extensive asset conditions will result in a low level of openness, while liberal conditions will result in a high level of openness (see Exhibit 1.2). This analysis demonstrates that full openness is the complete absence of conditions limiting access, while fully closed refers to a set of conditions that prevents third-party access to the asset in any form.

Exhibit 1.2  
Openness levels of assets



The Linux operating system is a good example of a very open asset. Published under an open-source license, Linux software can be freely used as a basis for any commercial software product, for free. The conditions of access to this asset are thus extremely low, which puts it close to top of the openness scale. Apple's OSX operating

system, on the other hand, lies at the other end of the openness scale. Unlike Linux, third parties have no direct access to this asset – no one outside of Apple can access the source code and work with it on their own terms. As a result, the conditions of access are very high, placing this particular asset at the lower end of the openness scale.

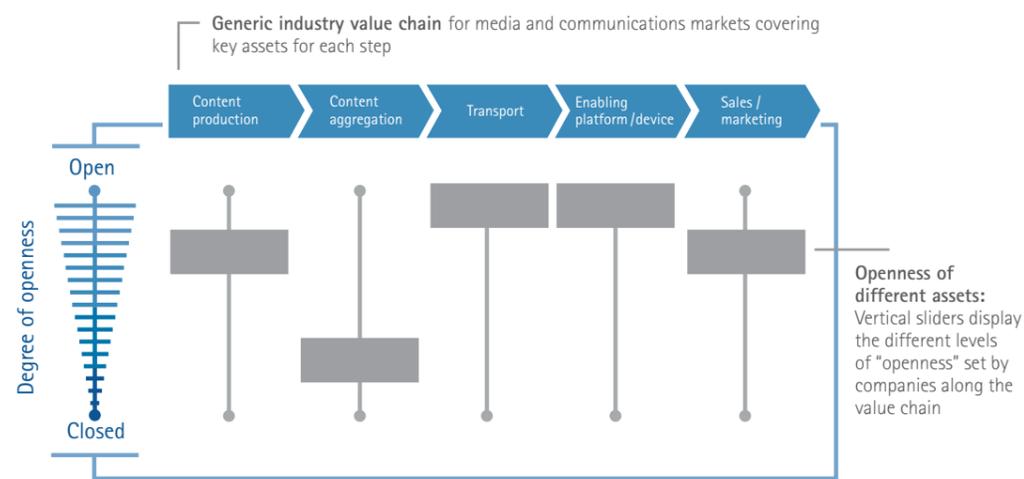
In between these two extremes are the degrees of openness that apply to most assets along the value chain based on the three types of conditions mentioned above – economic conditions, product and service conditions and technical conditions.<sup>5</sup>

### Using the framework

By plotting the value chain against asset openness, the framework can be used to analy-

se *openness constellations* along the entire value chain. The *generic digital media value chain* – from content production to marketing and sales – is mapped against *the degree of openness of the assets* in it based on the various *conditions* that *asset holders* can place on access to those assets (see Exhibit 1.3). Each element on the vertical sliders – a network, a device, a piece of software or a retail outlet – represents an asset that is being used to generate value somewhere along the value chain.

Exhibit 1.3  
The openness framework



Typically, the asset holders have the ability to define the degree of openness of their assets for business purposes by tying one or more conditions to their use. The degree of openness of an asset can, however, also be subject to factors outside the asset holder's control. These include regulation, as in the case of mandated access for voice telephony and Internet access providers to

incumbent telecommunications operators' networks, "must carry" rules governing TV channels' access to cable operators' networks and mandated compatibility of software products. Security considerations might also limit the degree to which asset holders can open the development environment of an operating system or a search algorithm to prevent manipulation, e.g., through malware.

<sup>5</sup> Please refer to the methodology appendix for more details on framework definitions

*The degree of openness of an asset can, however, also be subject to factors outside the asset holder's control.*

In order to assess how different degrees of openness can affect the potential for value creation or innovation in a particular market, the amount of strategic leverage that can be established around an asset must be taken into account. The potential degree of strategic leverage is, amongst others, determined on the one hand by the number of substitution alternatives available for the asset, and on the other hand by the number of third parties relying on access to that asset. Hence, when an asset is closed, but there are numerous equal alternatives in the market, it has little relevance for or impact on the overall industry. Therefore, strategic leverage can exist only when a market player is able to establish a competitive advantage based on an as-

set – for example, through product quality, service quality or cost structure. Strategic leverage is thus the very foundation of value generation for every industry participant, and depends primarily on the access conditions surrounding an asset. Rich access conditions inherent in an asset – in other words, a low degree of openness – become problematic only when one party is able to exert dominance over large parts of the value chain based on his control of that critical asset.

*The potential degree of strategic leverage is on the one hand determined by the number of substitution alternatives available for the asset, and on the other hand by the number of third parties relying on access to that asset.*

The same type of asset can be controlled by different types of companies, and different ty-



pes of third parties may seek to gain access to a particular asset. The set-top boxes through which end users watch digital TV and access premium on-demand services, for instance, may be controlled by device manufacturers, cable companies, SAT providers, IPTV providers or pay-TV providers – and each of these parties may set different terms for access by third parties.

In the data sphere, network transport provisioning may be controlled by asset holders such as cable companies, telecommunications incumbents, fibre network operators and mobile network operators, while third parties seeking access may include ISPs looking to resell Internet access to consumers, as well as providers of online services such as online retail or video streaming and Web-based innovators who rely on open or “managed” IP access to reach their user base. The same asset can therefore have different degrees of openness depending on who is being granted access. Consequently, in order to understand the effect of openness on a particular business model, it must be systematically examined by looking at the combination of the degree of openness of different

assets at each step of the value chain, both from a business perspective and from the perspective of the end user.

### Google Android: One asset, multiple levels of openness

The Android operating system is positioned as open to the applications developer community, as it does not impose exclusive production conditions for applications on the Android platform or insist on the rigid content approval conditions that Apple does. It nevertheless applies some restrictions for Android handset manufacturers and vendors in order to secure a unified Android experience. Vendors such as mobile carriers can add applications and features, but they cannot remove any. Moreover, vendors added different limitations on Android features, prohibiting tethering (the use of the phone as a modem), for instance, or preventing the installation of competing voice applications such as Skype. In reality, there are therefore at least three

different constellations of openness to Android OS – one for developers, one for carriers and one experienced by the end consumer, for whom openness is not the same thing as “no limitations,” due to the different conditions set by Google’s partners for the use of the device.

The framework and the definitions discussed above provide a basis for an objective discussion of the merits of different openness constellations and of changing the degrees of openness along the value chain. The application of the framework in its most simple form can be demonstrated by a well-known example from the openness debate of the past years – regulation of the telecommunications

incumbents’ transport networks and the resulting shift in openness (see Exhibit 1.4). The framework makes clear that the incumbent network operators became more open, allowing third-party access to their networks by alternative access providers under certain price conditions – primarily through wholesale and unbundling activities. A similar shift can be observed in the framework following the European Commission’s decision to make Microsoft disclose complete and accurate interface documentation, which allowed non-Microsoft work group servers to achieve full interoperability with Windows PCs and workgroup servers (see exhibit 1.5). The openness levels of Microsoft’s assets were increased and the ruling granted third-party software providers increased access to Microsoft’s product documentation and interfaces.

Exhibit 1.4  
Opening up of telecommunication incumbents networks for third-party wholesale access

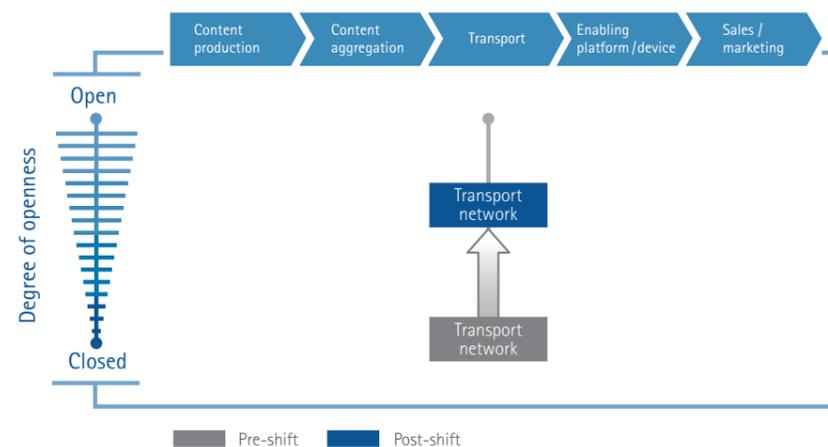
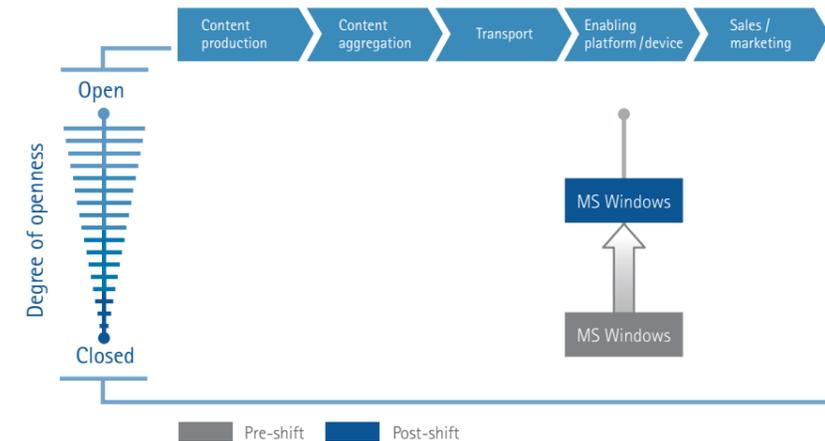
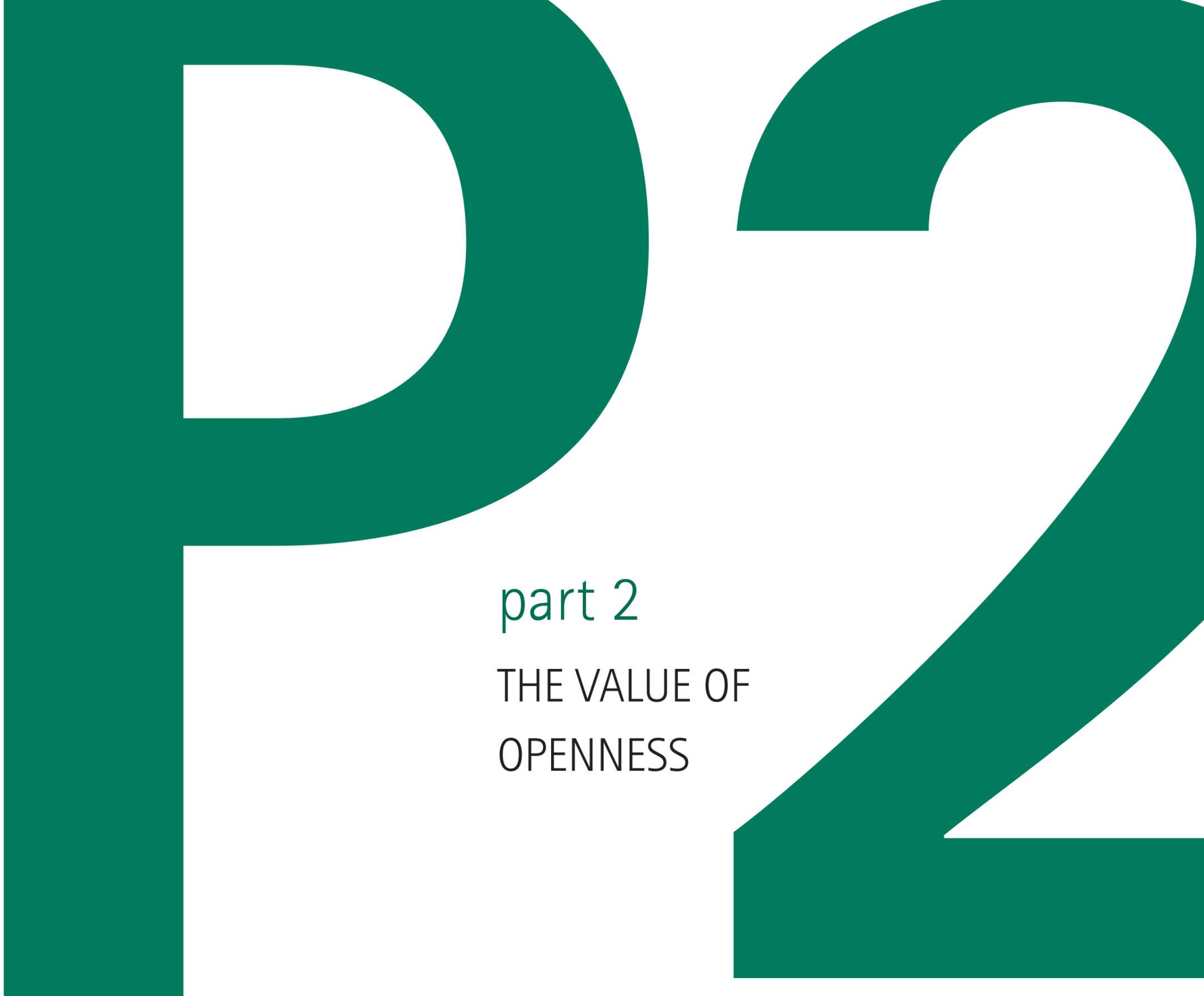


Exhibit 1.5  
Shift in third-party software providers’ access to the Microsoft Windows operating system through regulation



The basic openness framework applicability described above is a relatively simple way of demonstrating shifts in the openness of specific assets for the purpose of defining and explaining the basic analytical approach. More complex constellations, interplays and shifts can be demonstrated by plotting different assets of different companies into the framework and analysing

their interplay along the value chain. In practice, openness levels along the digital value chain are constantly evolving in step with the dynamic market developments triggered by competition, technology disruptions and consumer pressures. The demonstration, discussion and implications of these dynamic changes will be the focus of the remainder of this study.



part 2

THE VALUE OF  
OPENNESS

# THE VALUE OF OPENNESS

## THE VALUE OF OPENNESS – How openness can impact innovation and growth

Can an open, common standard drive an industry from virtually zero revenues to \$300 billion in just 10 years? Can a different kind of openness cause another global industry to lose a third of its value in the same timeframe? Does "open" create more value than "closed"? A fundamental question in the openness debate will always be about how "open" or "closed" can create or destroy value for companies, industries and consumers. Different kinds of openness can have very different effects.

*A fundamental question in the openness debate will always be about how "open" or "closed" can create or destroy value for companies, industries and consumers.*

While the effect of openness on industries and companies can vary, it is clear that businesses built around complete openness cannot create sustainable economic value or growth. When a business model is completely open, it lacks the vital strategic advantage needed for value generation, and therefore can only function on the basis of either sponsorships, donations or – as in the case of digital piracy – theft. Reasonable levels of openness and interoperability can, however, be very beneficial to both businesses and consumers, as in the case of the growth dynamics of the Internet economy today. Business models that are perceived as closed have repeatedly created great economic value, driven industry innovation and produced consumer benefits. But to the same extent that extreme forms of openness are not feasible for value generati-

on, it also clear that certain forms of closedness can have negative effects on an industry – when competition is hindered by excessive limitations on access to key assets, or when companies' strategic positions lead to consumer lock-in effects without adequate alternatives.

To better understand these dynamics, it is helpful to look at how openness has materialised in different sectors of the media and telecommunication industries and how they have influenced value creation, growth and consumer benefit.

### Industries in decline due to openness

Empirical evidence shows that it is difficult to generate value and growth in an environment of complete openness. When access to assets becomes completely open, the negative effects on an industry can be enormous. Two industries in particular have undergone this process in the past decade: the music industry and the newspaper industry. Both industries lost their strategic advantage – and consequently a significant amount of their revenues – as their content migrated to digital formats.

Prior to the rise of digital recording and the Internet, the music industry was a relatively closed shop: Record companies such as EMI and Columbia largely controlled both the production and the aggregation of the content, and they had a major influence on distribution through retail music stores, and on the marketing and sales of

the products. The only link in the value chain they did not control was the enabling devices used to play records, tapes and CDs. Once consumer technology had advanced enough to allow content to be digitised, copied and shared over the open Internet, however, practically every element of the value chain was opened up: The content itself could be reproduced for free – although this was illegal if the purpose was to distribute

it to others – aggregated through P2P networks such as the original Napster, transported freely over the open Internet and played through PCs and open MP3 devices (see exhibit 2.1). The illegal distribution of music content was a direct result of the music industry's inability to hold on to its strategic position that existed in the physical world and a failure to swiftly create new ones in the digital environment.

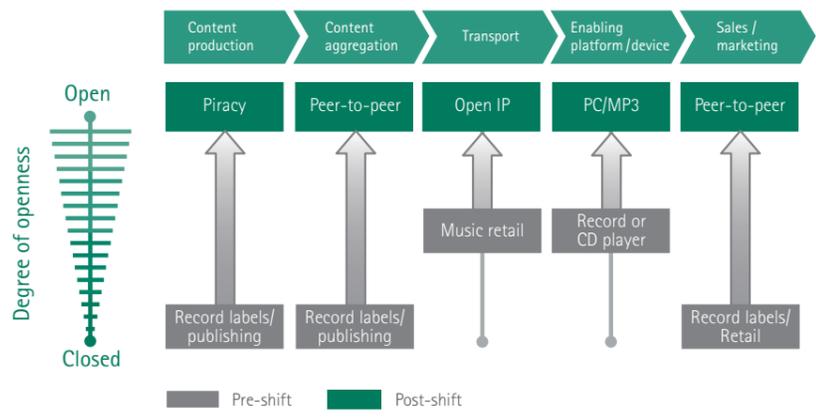


Exhibit 2.1 Shifting openness levels in the music industry from the "physical age" to the "Napster age"

*Once consumer technology had advanced enough to allow content to be digitised, copied and shared over the open Internet, practically every element of the value chain was opened up.*

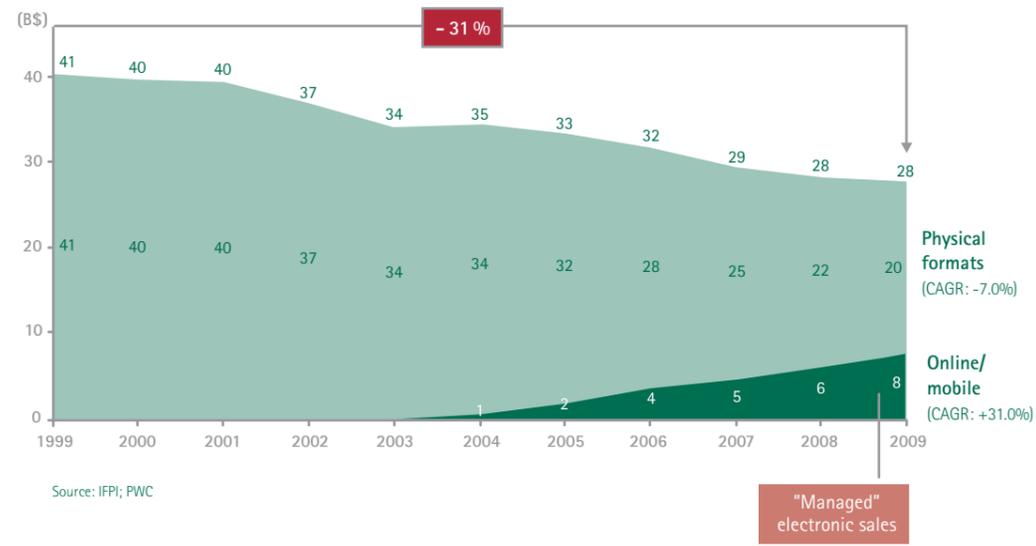
In the "physical" age of retail record shops, before 1999, music revenues totalled about \$40 billion annually, all of it offline. During the heyday of Napster and other piracy sites, up until the international rollout of iTunes in 2004, these offline revenues declined by 17 percent, to \$34 billion annually. That was offset by just \$1 billion in online revenues. Since then, offline revenues have

fallen further, to just \$20 billion a year, but online revenues have grown to \$8 billion (see exhibit 2.2 next page).

The legal online sale of music has by no means made up for the lost offline revenues, caused by a technology disruption and emergence of a "free" online culture, but it has demonstrated the viability of a more closed environment, with real benefits for its stakeholders. The success of Apple's iTunes demonstrates these benefits. Apple contracts with music companies to aggregate and sell content through its music store, an asset whose access is subject to various conditions (see exhibit 2.3). Through the use of a proprietary

# THE VALUE OF OPENNESS

Exhibit 2.2  
Revenue development of the global music industry



encryption standard (AAC), Apple ensures that songs can only be played on Apple's devices, or by using Apple's iTunes software on either Apple computers or PCs. Regarding sales and marketing, Apple gives content producers access to its iTunes platform under certain conditions, while closely controlling its brand and assets. For instance, the price charged per song is set by Apple, which does not allow differentiated pricing, and the DRM rules have in the past been predefined. However, the success of iTunes is also based on the very openness that made the illegal P2P networks so popular – the open Internet that is used to transport music files to users.

*The legal online sale of music has by no means made up for the lost offline revenues, but it has demonstrated the viability of a more closed environment, with real benefits for its stakeholders.*

The newspaper industry has also suffered from an openness development, although in this case somewhat self-inflicted. Newspapers made a conscious decision to distribute their content online for free, while dramatically underestimating the impact that the open Internet would have on their business model. The newspapers regarded the Internet as a complementary promotional channel but failed to understand the shift towards online consumption of content. Nobody anticipated the rapid and constantly accelerating decline in newspaper circulation and advertising revenues as consumers in growing numbers preferred to get their news through online channels.

When the industry migrated from the relatively closed aggregation and regional distribution of information to the digital age of the Internet, strategic positions associated with the publishers' key aggregation and distribution assets shifted to other participants in the value

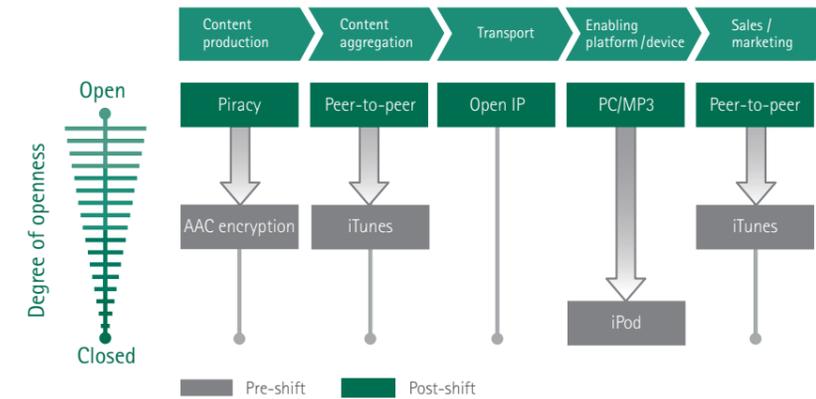


Exhibit 2.3  
Shifting openness levels in the music industry from the "Napster age" to the "iTunes age"

chain (see exhibit 2.4). As content became freely accessible on the Internet, search providers such as Google and Yahoo could easily aggregate it and build new search- and advertising-driven business models around it.

Advertisers quickly followed their audience online, further undermining newspapers' primary source of revenues. The development was particularly dramatic in the US, where between 2004 and 2009, revenues fell by 34%, from \$59 billion to \$39 billion. In European markets,

the trend was the same, although not always quite as dramatic due to a stronger print affinity and more stable subscription-based revenues in some countries. In the UK, revenues fell by 21% and in Italy by 11%, while other large print markets showed more stability.

In response to this dramatic erosion of revenues, some media companies are trying to re-establish a strategic position around their news content, applying conditions for access to their exclusive online news content by introducing

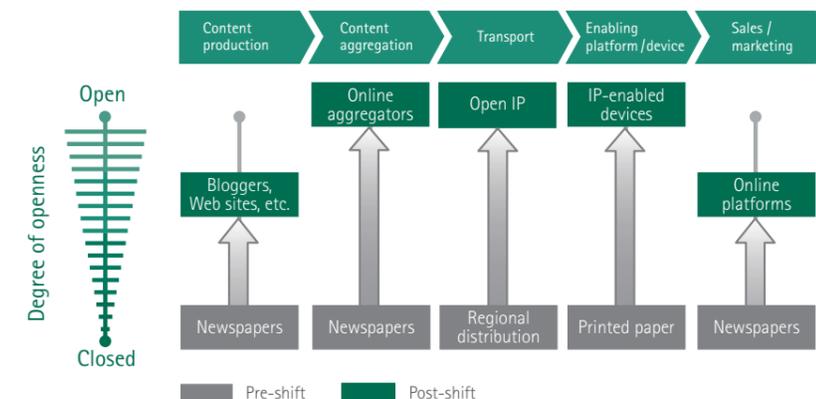
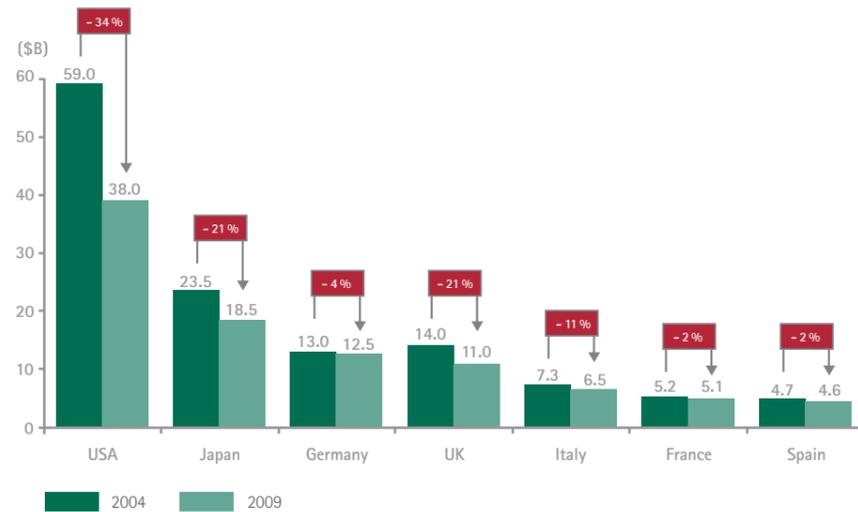


Exhibit 2.4  
Shifting openness levels in the newspaper industry from the "print age" to the "online age"

Exhibit 2.5  
Development of international newspaper markets 2004–2009



Source: OECD, *The Evolution of News and the Internet*, 2010

paid end-user access to their online offerings, most commonly by providing premium content on a subscription basis. The newspaper industry in Europe, for example, has called for setting territorial copyright license fees for online news aggregators, revenue shares with search engines and alternative monetary compensation by ISPs. The *Wall Street Journal* is one of the few companies that have been marginally successful in building an online subscriber base, having reached 400,000 digital customers in addition to its 2.1 million print subscribers. However, spending on new subscription models is not expected to grow fast enough to offset the circulation losses anticipated in the coming years.

The newspaper industry is still looking for the proper openness balance that would allow it to grant access to its assets in an economically sustainable way. The latest prominent effort to achieve this was announced at the end of November 2010. Apple and News Corporation are jointly working on a new breed of newspapers

especially designed for tablets like the iPad. The subscription publication will not be available in print or even on the Internet – the only way to obtain a copy is through a subscription app on tablet devices. The mobile and smart device revolution is seen by many as a significant opportunity for the publishing sector to move away from the free culture of the public open Internet. Consumers have shown a willingness to pay for content and applications used on smartphones and tablets. Printed media is therefore attempting to replicate the openness shift of the music industry demonstrated above – moving away from the “online age” into an “app age.”

*Printed media is therefore attempting to replicate the openness shift of the music industry – moving away from the “online age” into an “app age.”*

## Open standards – a growth enabler in technology and communication

Despite the existence of casualties of openness like the music and newspaper industries, not all forms of openness lead to value destruction. On the contrary, certain forms of openness have been very beneficial to companies, industries and consumers alike. Many open and interoperable standards have had a positive impact on technology industries, the Internet space and the ICT sector.

Large-scale access to and use of standards like the Internet Protocol (IP), Transmission Control Protocol (TCP) and Hypertext Control Protocol (HTTP) has driven the enormous growth of the Internet economy and any number of innovative Web-based business models. The interoperability of proprietary Internet services has led to a virtuous circle of value creation as the number of people and companies developing, using and connecting services has grown at exponential rates.

The value of these open standards is not easy to measure but its fundamental impact can be demonstrated through the number of people using the Internet – a figure that is currently approaching 2 billion worldwide. A quarter of them are in Europe, four times the number of just 10 years ago<sup>1</sup>. Global online retail sales totalled around \$350 billion in 2009<sup>2</sup>, having grown at double-digit rates for the past decade. Online advertising reached \$60 billion in 2010 and is expected to grow to more than \$90 billion by 2014<sup>3</sup>. In the UK alone, the Internet economy is estimated to be worth around £100 billion, or 7.2 percent of the country's gross domestic product.

That is a larger share of GDP than that of either construction, transportation or utilities, for example.

The introduction of common standards in mobile telecommunications has also helped drive both economic and consumer value on a large scale. One example is the common open GSM standard, which has helped drive the mobile communication industry from virtually no revenues to around €300 billion globally in just 10 years. Following a period in which mobile telephony was based on different solutions and technical protocols across Europe, 13 countries signed off on a joint standard and developed a common mobile telephone system across the continent. The standard drove down costs and increased consumer penetration much faster than earlier proprietary national technologies. The first phase of GSM adaptation started in 1990; by the end of 1995, global GSM subscribers had already exceeded 10 million. During the first 10 years of deployment, telecommunications operators globally increased their revenues at a remarkable rate, from next to nothing in 1990 to close to \$300 billion by the year 2000 (see Exhibit 2.6). At the same time, fragmented national standards such as the German C-Netz were not able to create the same scale and essentially faded away within a few years.

Open standards have also been a significant growth and innovation driver in the software industry. Open-source software (OSS) and products using open standards have grown quickly in the recent years. Linux and its related open-source ecosystem together generated revenues of over \$25 billion in 2009 (see exhibit 2.7). The continuing growth of open source software revenues is partially driven

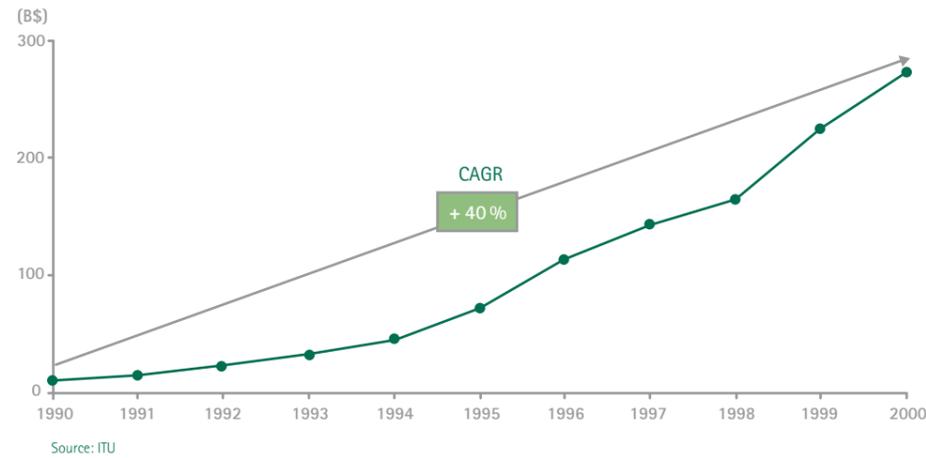
<sup>1</sup> Internet World Statistics

<sup>2</sup> IMAP Retail Industry Global Report

<sup>3</sup> eMarketer 2010

# THE VALUE OF OPENNESS

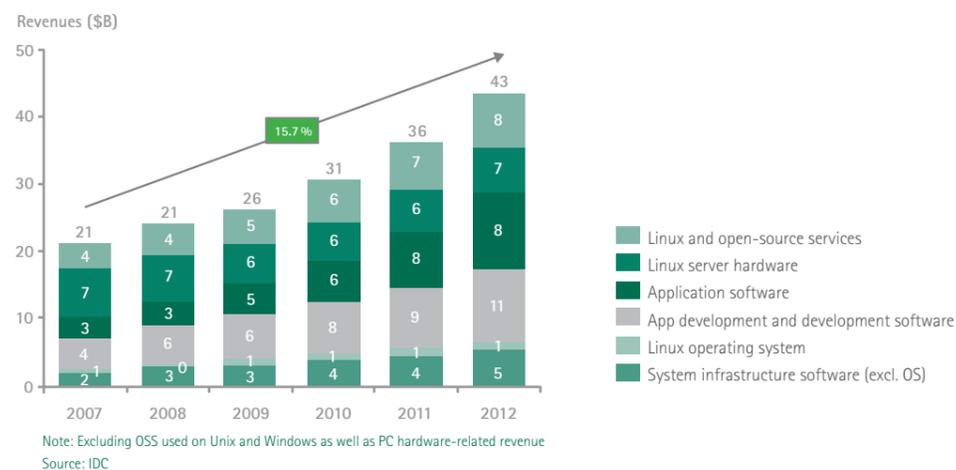
Exhibit 2.6  
Mobile telephony's  
"first-decade" growth  
(1990-2000)



by two factors: mainstream adoption by enterprises to drive down IT costs and the fact that OSS is increasingly becoming more "managed." Companies like Red Hat are building products and services on top of a variety of open standards and products, while giants like Oracle and IBM are incorporating open-source products into their own proprietary offerings. This development has changed the nature of open-source software from being seen as a risk to being mainstream fare and a valid alternative to proprietary solutions.

*Growth and innovation driven by access to open or interoperable technical assets such as GSM, Linux and IP are not the same thing as complete openness. Businesses that successfully use open standards all set their own strategic leverage points on top of these open standards, which is what enables them to create value and growth.*

Exhibit 2.7  
Growth of the Linux  
open-source ecosystem

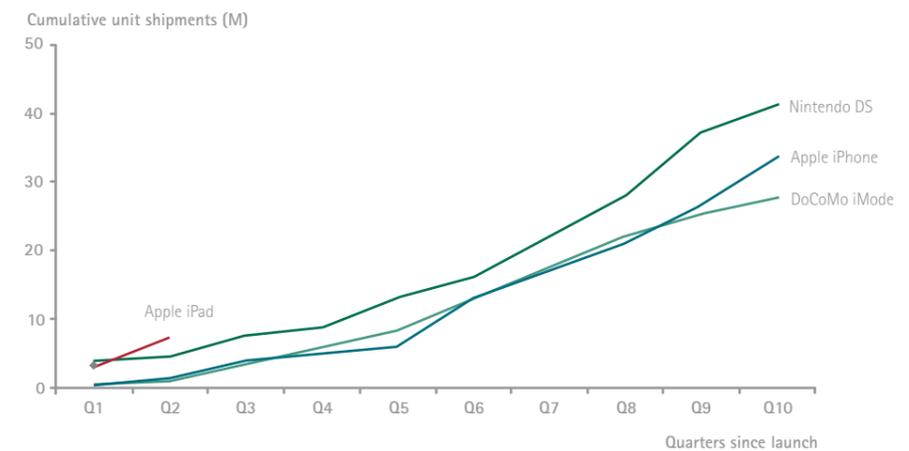


However, it is important to note that the growth and innovation that has been driven by access to open or interoperable technical assets such as GSM, Linux and IP is not the same thing as complete openness. Businesses that successfully use open standards all set their own strategic leverage points on top of these open standards, which is what enables them to create value and growth. This holds true for Internet retailers such as Amazon or Expedia, which create strategic advantage around their brand, product offering and sales channel, telecommunications companies like BT or Telefónica, which differentiate themselves through network performance and retail operations, and vendors of open-source software such as Red Hat or Novell, which build and sell proprietary service and subscription models on top of the software. In the absence of such strategic leverage points, no company can create economic value by using open standards.

## Closed systems driving innovation and growth

There are many examples of products and services in the telecommunications and media industry that, although they are often referred to as closed, have experienced remarkably fast consumer adoption and revenue growth. The closed elements often include proprietary software, technology standards and retail platforms carefully managed by the innovating company. These closed elements often represent the preconditions for creating the desired consumer experience and the strategic differentiation required to recapture investment in research and development. Apple's iPhone, Nintendo's game consoles and NTT DOCOMO's wireless Internet standard i-mode are all examples of such products and services – and they all have in common a history of phenomenal growth and consumer appreciation that has helped revolutionise consumer behaviour patterns and the shape of entire industries (see Exhibit 2.8).

Exhibit 2.8  
Consumer pick up rates  
of "closed" systems



*The success of i-mode can be attributed partly to the fact that it was a relatively closed and well-managed product environment.*

The logic behind a successful closed consumer offering can be effectively explained by the example of Japan's mobile Internet service i-mode. Launched by NTT DOCOMO in 1999, i-mode redefined mobile communications by offering a full range of Web services for mobile phones. Access to a variety of Internet services such as e-mail, sports results and ticket booking on mobile devices quickly resonated with customers – in less than three years, the number of users had surpassed 20 million, and continued to grow, reaching almost 50 million in 2009. The success of i-mode can be attributed partly to the fact that it was a relatively closed and well-managed product environment, which leveraged a mixture of open and proprietary technical standards that optimised the functionality of services for mobile use. DOCOMO made sure to offer a wide range of services, entering into numerous content relationships that provided the official mobile portal with around 12,000 individual sites. The development environment and standards were rigidly defined for the content partners as well as for non-partner content providers, which now offer another 100,000 i-mode sites. The company also made sure that the mobile handsets it sold were tailored to i-mode's needs and offered especially built devices for the service sold under the DOCOMO brand. On the other hand, the European counterpart of i-mode, WAP, was an open international standard, but it never achieved the same success that i-mode did in Japan. WAP only reached 10% of customers in Eu-

rope after four years in the market, while i-mode reached 80% in the same timeframe<sup>4</sup>.

Similar principles apply to Apple's range of devices and Nintendo's game consoles. Apple, for example, designs and manages a very large part of the whole user experience. The device, applications, sales and presentation of content are all a part of an integrated concept rigidly controlled by Apple. According to the company, the closed elements of the business model serve to ensure quality and usability of the products for the end consumer. This approach to innovation has paid off for Apple, whose devices have enjoyed one of the fastest consumer penetration rates in history. The iPhone, launched in 2007, sold over 30 million units in the first ten quarters after launch, and the cumulated device sales to date<sup>5</sup> have surpassed 70 million units. The recently launched iPad is showing even faster selling rates, having sold over 7 million devices within six months of its release.

### Desirable levels of openness – a balancing act

These examples demonstrate that neither open nor closed systems are by default entirely beneficial or entirely destructive for a company or an industry. The most desirable degree of openness – the openness "sweet spot" – lies somewhere in between these two extremes and differs between industries, companies and business models. The various conditions that a company places on its assets must be sufficiently strong to enable it to create a competitive advantage, while allowing third parties enough access to create a combina-

tion that generates a meaningful value proposition for the consumer and innovation along the entire value chain.

*The various conditions that a company places on its assets need to be sufficiently strong to enable it to create a competitive advantage, while allowing third parties enough access to create a combination that generates a meaningful value proposition for the consumer and innovation along the entire value chain.*

Consequently, every company in every industry orchestrates its levels of openness to create strategic advantage and enable value generation within the context of its industry value chain. A number of typical openness levels and combinations can be observed in the prevalent business models in the digital economy. The result is a complex interplay of open and closed that applies to all areas of media and telecommunications and to all the companies that operate within the realms of this converged industry, which will be examined in more detail in the next section.



<sup>4</sup> Penetration as percentage of overall mobile phone users in the respective markets; based on data from NTT DOCOMO and CRT

<sup>5</sup> September 2010



part 3

OPENNESS DIMENSIONS

### OPENNESS DIMENSIONS – The business models of openness

There are countless examples of companies, standards, technologies and business models that are either open or closed to a greater or a lesser extent. Some of these have created value, others quite the contrary. The notion that a company or a business model could be entirely open or closed is misleading. The fact is that the extremes of open or closed rarely exist, only different degrees of openness. A complex interplay of open and closed applies to all areas of media and telecommunications. Every company in every industry orchestrates its levels of openness to create strategic points of leverage that enable value generation within the context of its industry value chain.

*The fact is that the extremes of open or closed rarely exist, only different degrees of openness.*

A number of typical openness levels can be observed through an examination of the prevalent industry business models. In different parts of the value chain, companies build strategic points of leverage around specific tangible or intangible assets that serve as the foundation of their ability to create value. Although there can be any number of openness combinations in any given sector of the industry, five general business model types commonly observed in today's digital economy<sup>1</sup> represent the typical ones:

- **The distribution-centred model** builds its competitive position around the performance

and capacity of a physical transport network (e.g., Telefónica, UPC, Vodafone)

- **The aggregation-centred model** derives its strategic advantage from the valuable content rights it holds and its branded aggregation platforms (e.g., Sky, BBC, RTL)
- **The search-centred model** generates its success from its ability to navigate through digital content as well as being an entry point to the Web (e.g., Google, Bing)
- **The device-centred model** draws its advantage from the superior design and functionality of devices that provide access to digital content (e.g., Apple, Nintendo, Samsung)
- **The community-centred model** derives its power from the scale and network effects of a global user base (e.g., Facebook, YouTube, Twitter).

The openness levels of different assets depend on the business model employed and associated revenue sources. The perceptions of a company's openness are often driven by how open or interoperable its services appear to be from the point of view of the end consumer, and by whether assets and services are accessible for free or come at a price. A closer look reveals that market players' claims of openness often relate to those assets that drive traffic, clicks, user data or content to establish the network effects needed to make the business model work. The core

monetisation assets in virtually each of these five typical business models contain elements that are actually less open than the parts that appear to be open or free. A "free" TV channel still holds rights to the content it broadcasts, because those rights are the foundation on which it attracts viewers and advertising revenues. A free search Web site still controls its closed computing infrastructure, including its search algorithms, as well as its underlying usage data. Business models based on advertising revenues, such as free TV, search and social networking communities, will typically have a different openness profile than a business model that is dependent on direct consumer payments, such as cable television, mobile telephony or consumer devices. However, all of them have one thing in common: They all apply different levels of openness to their assets along different steps of the value chain.

The categorisation of the digital economy into a set of typical business models is of course to some extent a simplification of reality, but it is necessary in order to create more clarity around the discussion of openness and how different combinations of open and closed assets function in an increasingly complex industry. All of these business models can be found in various varieties in most national markets, although their importance can vary. The critical characteristic of all of these business models is that the primary players in each one owns one or more key assets to which they can apply conditions to of an economic, technical or content nature. In this way, companies create value through the monetisation of their own assets in the form of, e.g., subscrip-

tion fees, premium services, advertising revenues, device sales or content licenses. At the same time – partly because new business models are expanding across the digital value chain – companies rely on access to key assets owned by third parties. In today's multi-sided markets, all players depend on the relative openness of other assets as different business models interact and converge.

*In today's multi-sided markets, all players depend on the relative openness of other assets as different business models interact and converge.*

Employing their different openness levels, the five business models types collectively generated revenues of more than €360 billion in Europe in 2009<sup>2</sup>. In terms of revenues, the distribution-centred model<sup>3</sup> is by far the largest, accounting for more than €260 billion of the total. The greatest revenue growth in the past five years, however, was achieved by "new" players active in search (49% growth), Web community platforms (35%) and device sales (15%). During that period, distribution revenues actually decreased slightly, by 1%, and content aggregators showed moderate growth of just 3% (see Exhibit 3.1, next page).

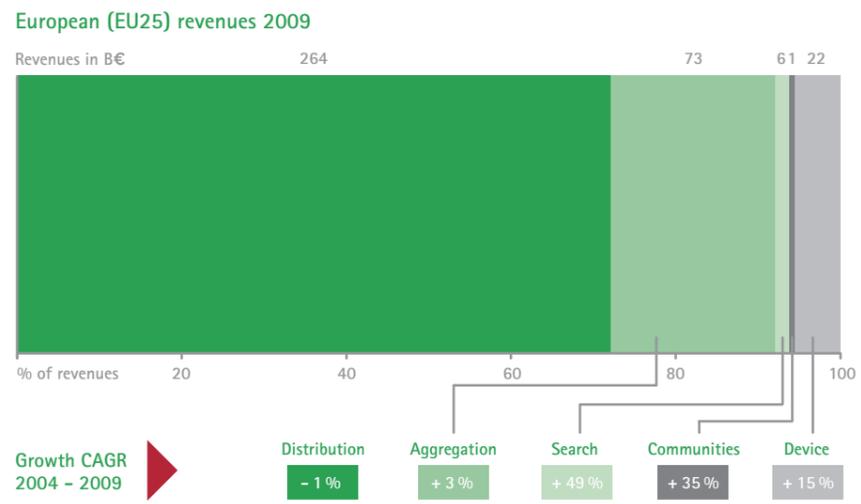
*The greatest revenue growth in the past five years, however, was achieved by "new" players active in search (49% growth), Web community platforms (35%) and device sales (15%).*

<sup>1</sup> Examples of typical business models in various sectors of the industry and not exact representations of any specific company or the openness of its assets

<sup>2</sup> EU25 revenues of for the purpose of this study defined business models. Revenues are not an exhaustive representation of the size of the European ICT, telecommunications and media industry

<sup>3</sup> TV Access, mobile and fixed-line data/voice revenues

Exhibit 3.1  
Revenue and growth of the business model types



Source: Company reports; EITO; OBS; Magna Global; SNL Kagan; Forrester; Ovum; eMarketer; Internet World Stats; Gartner; Juniper; IDC; OANDA; BCG market modeling

Although they are growing from a smaller base, the high-growth segments indicate a significant change in dynamics of the industry. Many of these highly innovative business models are global in scale and represent completely new Web-based ecosystems that span both fixed and mobile platforms – and operate independently of the underlying physical infrastructure. These developments are changing the balance of power within the industry and are raising new questions about the value of openness and the importance of various traditional assets, market access and consumer choice.

The observation of these different business model types helps to understand more clearly how various stakeholders stand to gain or lose from the interaction and openness of different players in a market. A closer examination of each one helps to visualise where the various companies hold their core assets or poten-

tial strategic advantage, where they access the assets of others, how they generate value for themselves and how relevant the various asset holders and third parties are for their respective environment.

### The distribution-centred model

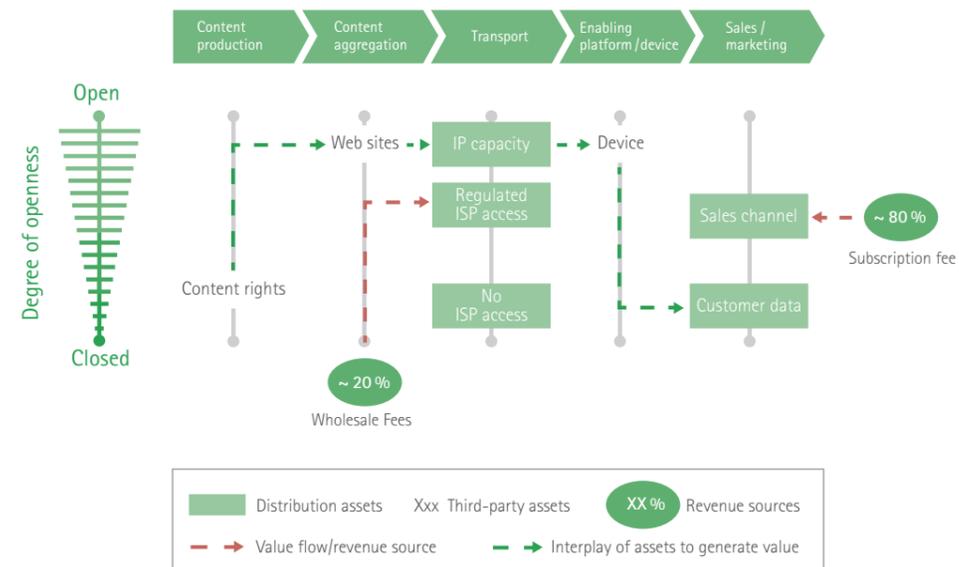
The distribution-centred model leverages its customer billing relationships and the performance and capacity of its managed transport systems to extend its influence to other parts of the value chain, including content aggregation, platforms and devices. Cable and satellite providers fall into this category, as do telecommunications companies and other network providers, such as FTTH networks. The core asset held by the primary players in distribution is their managed transport network itself, for the distribution of data, voice and video services.

*The distribution-centred business model is typically perceived as a relatively closed, whereas there are significant parts of transport companies' assets that are relatively open.*

The distribution-centred model is typically perceived as relatively closed, whereas there are significant parts of distribution companies' assets that are relatively open towards both content providers and third-party access providers. *Telecommunications* (see Exhibit 3.2) is a case in point. The core network asset, including next-

generation fibre infrastructure, is regulated to provide physical and wholesale access to alternative providers of broadband or voice services based on defined price and technology conditions (e.g., regulated price ranges and terms of technical access to network infrastructure). For a typical incumbent telecommunications company, the revenues are split between direct consumer subscriptions and regulated wholesale revenues (access fees for third-party ISPs and MVNOs). The largest total block of revenues, or more than half the overall company income, typically comes from mobile operations.

Exhibit 3.2  
The distribution-centred model—fixed and mobile data



Note: Example of a typical network player's assets' openness towards content players (online) and 3rd-party ISP providers

Cable networks are subject to "must carry" regulations, giving a certain number of predefined television channels access to managed distribution capacity and to the cable operator's basic TV channel bouquet in order to guarantee media pluralism. Access for television and theme

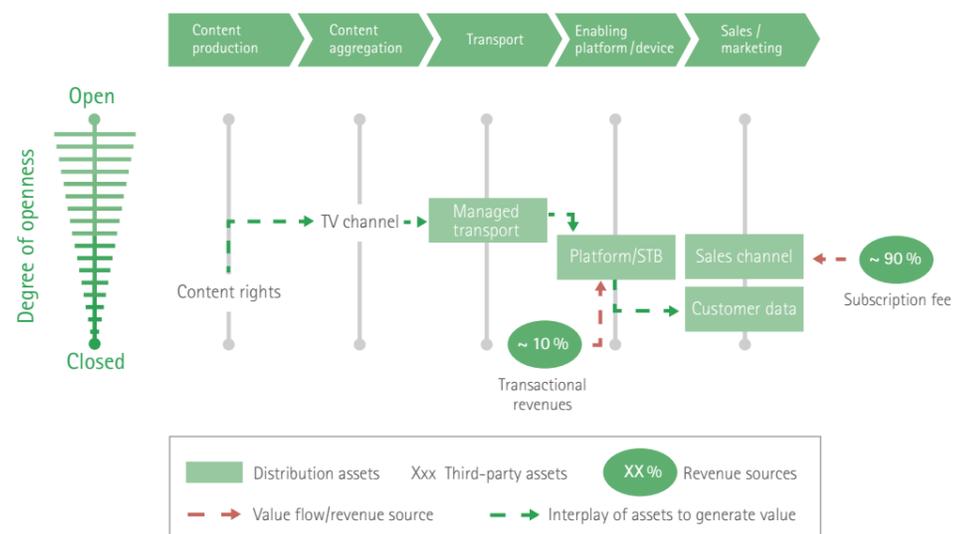
channels to extended digital channel packages or carriage in premium packages is granted on the basis of transmission fees or revenue share agreements. Cable is furthermore obligated to grant access to its conditional access systems for pay-TV operators on fair, reasonable and non-discriminatory

minatory terms (see exhibit 3.3). As long as cable is not designated as having significant market power in the wholesale broadband and broadcast market, cable is not obligated to grant physical or wholesale access.

FTTH networks operate a three-layer transport model, consisting of a passive physical transport layer, an active wholesale layer and a

retail services layer. A variety of openness dimensions are deployed, ranging from fully vertically integrated FTTH operators controlling all three layers, like Hansenet in Germany, to full separation in which ownership of all three layers is partitioned. The latter is typically the case in FTTH networks built with public funds. FTTH networks on the basis of public-private partnerships operate in between these extremes.

Exhibit 3.3  
The distribution-centred model—cable and IPTV



Note: Example of a typical network player's assets' openness towards content players

The strength of distribution players' strategic position, built on the core network asset, is counterbalanced by their need for access to other assets in the value chain, e.g., video content, devices and applications. The dependence on content, for example, has long been the case for cable TV networks, but it currently also applies to operators of telecommunications and fibre networks wishing to offer video services as part of their triple-play strategy. Competition from Web-based business models (including

OTT content platforms, search and e-commerce) over the unmanaged IP layer represents both a challenge and an opportunity to establish new strategic positions in IP transport within the confines of net neutrality.

Some mobile operators have attempted to strengthen their competitive positions by entering into exclusivity arrangements with manufacturers of enabling end-user devices, particularly smartphones, whereby Apple's iPhone is a

prime example. In the US, this popular device is so far available only through AT&T, thus denying other operators access to the device. This type of setup was also the case in Germany and the UK,

where Deutsche Telekom and O2 held exclusive iPhone rights. These arrangements have, however, been abandoned, so that consumers can now choose their preferred network in both markets.

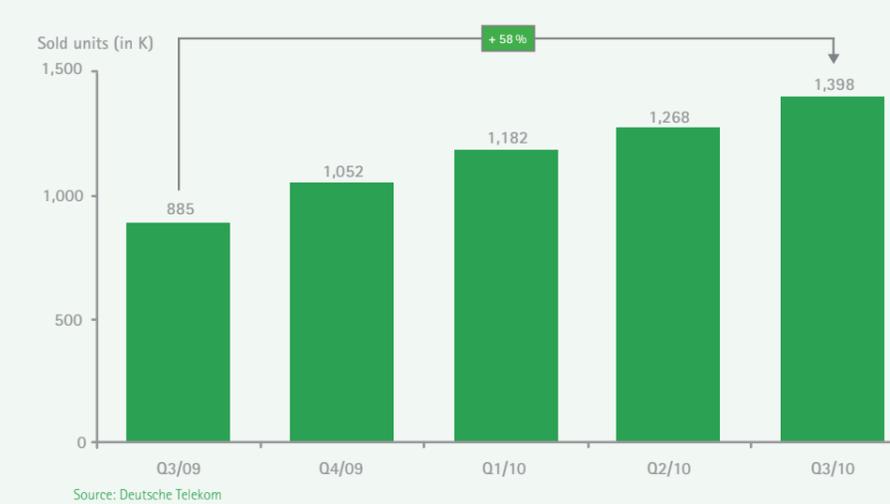
### Deutsche Telekom – a new player in aggregation

The German incumbent telecommunications operator Deutsche Telekom holds a strong position in all areas of its local telecommunications market, both fixed and mobile. A 46% market share in fixed broadband and around 36% share in the mobile space puts DT firmly in the market lead. The operator recently moved to expand into the TV market through its T-Entertain IPTV platform, putting it into direct competition with cable and satellite providers for both TV subscription and video-on-demand revenues. The growth trajectory of the new endeavour has already been significant: In the third quarter of 2010, the platform reached 1.4 million

customers – a growth rate of almost 60% over the previous year (see Exhibit 3.4).

DT's entrance into IPTV represents a typical expansion of a distribution-centric business model leveraging the core network asset, and the same trend can be observed in most European markets. What makes this particular venture interesting is that Deutsche Telekom directly bought up the Internet television rights to Germany's football league, thereby entering the content aggregation space. In addition to offering a wide range of linear television channels and video-on-demand services, the company now produces its own football show, called *Liga Total*, with live coverage of all first- and second-league games in Germany.

Exhibit 3.4  
Growth of T-Entertain



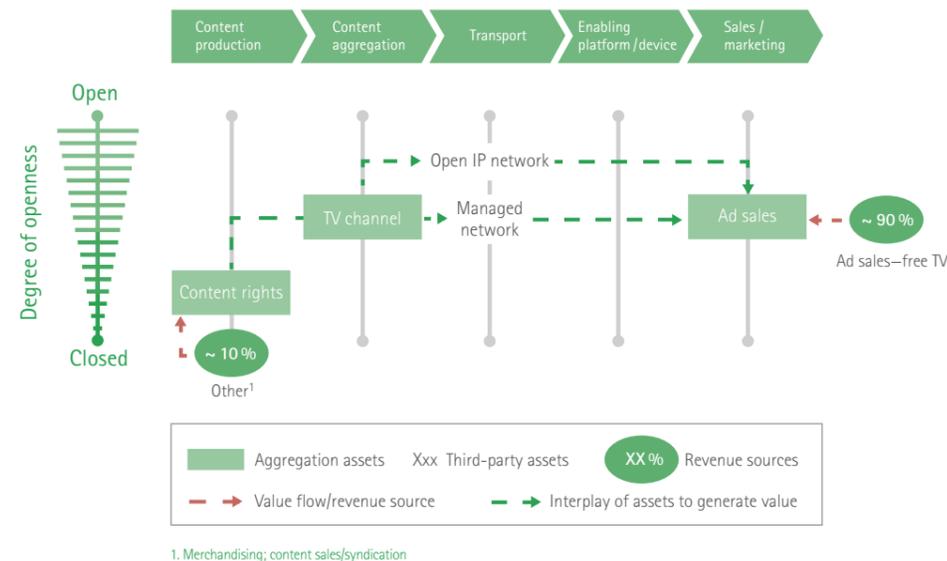
Source: Deutsche Telekom

## The aggregation-centred model

In this business model, content aggregators such as commercial broadcasters (e.g., RTL), public service broadcasters (e.g., BBC), pay-TV operators (e.g., Sky), online video portals (e.g.,

Netflix or Hulu) and traditional publishers such as the *Wall Street Journal* rely on their core asset of content rights and aggregation platform. That content can be distributed either through managed transport systems or via the open Internet (see Exhibit 3.5).

Exhibit 3.5  
The aggregation-centred model—free TV



Direct revenues are generated by selling territorial content licenses, e.g., VoD or HD offers or channel bundles to multichannel operators (cable, satellite or digital terrestrial operators) and to IPTV providers. Certain content rights (e.g., live sports) are also made accessible to partners on the basis of exclusivity agreements, driving up the value of the assets. In cases where content aggregators are also producers, they can capture even more market value and extend their leverage both forward and backward in the value chain. The main asset of content aggregators, apart from content licenses, lies at the sales and marketing end of the value chain, where they offer advertisers access to linear and non-linear

advertising space (through commercial breaks, display ads and pre-roll spots). Aggregators also make content directly accessible to the end user through proprietary online platforms against a premium, a subscription fee or for free, as in the case of advertising-funded or public service-based platforms.

*Content aggregators (including TV channel operators and online aggregators) profit both from direct sales of the content and from selling advertising against it.*

The success of the aggregation-centred business model also depends on access to the assets of other participants in the value chain. Content distribution rights must first be purchased from content producers; thus, TV content aggregators rely on access granted to them at a certain price. Aggregators also rely on transport infrastructure to transmit their content to the end users. They do, however, increasingly resort to open IP transport of their content (OTT) and bypass managed transport networks (SAT, cable and IPTV). Alternatively, aggregators may combine their content assets with online platform operators rolling out proprietary compatible reception devices (e.g., YouView in the UK). The new content leverage points created through online platforms and connected TV solutions give aggregators new negotiating powers regarding the price and content conditions set for their access to traditional transport assets. Most aggregators, however, continue to rely to a significant extent on traditional TV transport through managed networks, through which they gain access to a large customer base, which is crucial in preserving linear advertising revenues.

### SKY – different markets, different strength of position

While every local TV value chain has similar assets and potential leverage, the strength of these assets – and thus the ability of individual players to generate profits – depends on different factors. The very different TV markets in the UK and Germany illustrate how market conditions can have a significant impact on the ability of content players to benefit from the conditions they place on access to their assets.

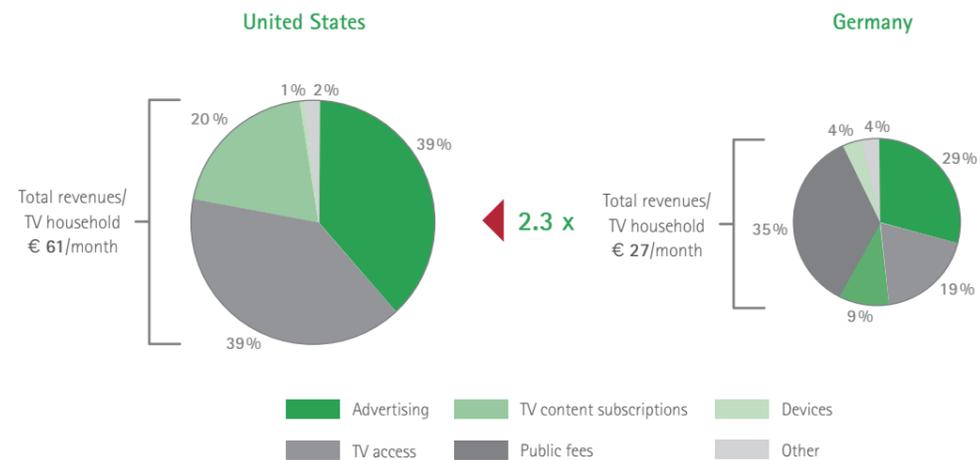
Because the UK historically had few free TV offerings – until 2002, only six channels were broadcast via analogue terrestrial TV – the BSkyB satellite system managed to gain a major foothold in the market early on by negotiating exclusive rights to a variety of live sports events. That gave the company a strong strategic position which it used to gain influence over large parts of the value chain, particularly transport, where its strength helped drive the growth of satellite TV. Now, 42% of TV households in the UK access content via satellite, and 35% of households subscribe to BSkyB. As a result, BSkyB's revenues grew from £3 billion in 2003 to £5 billion in 2005, and its 2009 profit margin was 15%.

In contrast, Germany's TV market offers consumers more than 70 free channels, and the many opportunities to watch TV for free have kept Sky Germany from building an equally strong leverage point around TV content. Although Sky Germany followed a model similar to that of BSkyB in the UK, it has not succeeded in increasing its subscriber base in recent years.

The differences in the ability of aggregators to capture value can also be seen by looking at markets as a whole. This can be illustrated, for instance, by comparing the US TV market to the German TV market, where the difference in revenues generated per household can in general be linked to weaker control over assets in Germany, especially around content. This again reflects the fact that Germany has traditionally been a free TV market (many chan-

nels available against a low basic subscription price) and the US a pay-TV market where multichannel TV is a genuine value add. Total US TV revenues from content subscriptions and direct pay, advertising, access and public fees comes to approximately €60 per household per year, while a German household generates less than €30 (see Exhibit 3.6).

Exhibit 3.6  
2009 television household revenues in the US and Germany



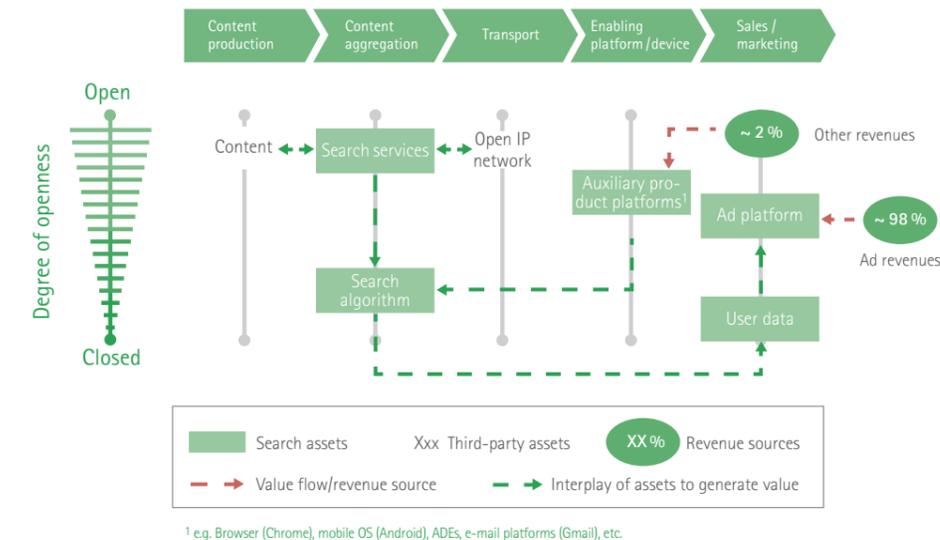
## The search-centred model

Companies in search provide online search services that enable users to find and consume free and paid content – usually over the open Internet – through various devices like desktop computers and smartphones. These search providers derive their strategic advantage from the quality of their proprietary search technology, their cross-platform presence, and the collection of usage data that enables them to optimise the search results and monetise the navigated content through contextual and personalised advertising models.

One core asset of online search providers is their search engine (see Exhibit 3.7), which is

essentially a content aggregation asset. Owned by asset holders such as Google and Microsoft (through its Bing search offering), the search engine guides users to most content, both on the Internet and, in the future, on hybrid television. Online content providers (including online retail, online magazines and video portals) use their access to the search engine as it enables them to be found by their customers. However, they cannot directly influence their ranking, because a search engine is in another way a closed asset. Its underlying algorithms and technology are proprietary and the usage data collected is closely guarded and tagged, which allows search providers to monetise the content they aggregate by selling advertising.

Exhibit 3.7  
The search-centred model

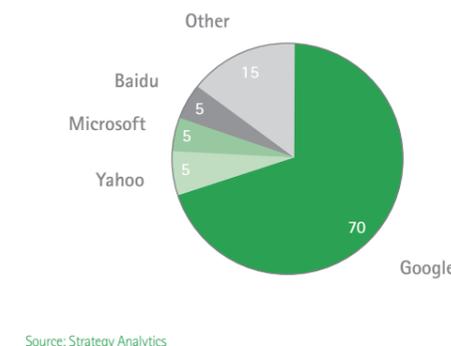


The other core asset of online search providers is their ad network (e.g., *Microsoft Media Network* or *Google AdSense*) consisting of Web sites that want to host advertisements. The key function of an ad network is aggregating ad space supply from publishers and matching it with advertiser demand. Online search providers offer Web sites, publishers and advertisers access to their targeted advertisement placement technology and advertising network for display ads, for instance, under price conditions. The revenue streams generated by search advertising have grown rapidly in recent years and are estimated to reach \$30 billion in 2010. The search market is a global and relatively concentrated market, with the leading company holding a market share of around 70% (see Exhibit 3.8).

*Its underlying technology is proprietary and the usage data collected is closely guarded, which allows search providers to monetise the content they aggregate by selling advertising.*

The ability of the owners of search engines to monetise their assets depends largely on their access to the assets of third parties at various points of the value chain. The search engine aggregates content assets belonging to content producers such as news sites, e-commerce sites, social networks, broadcasters and TV studios. Online search providers often link directly to

Exhibit 3.8  
Global online search market shares 2010



content on other content aggregators' sites, with most sites allowing this without setting any conditions. An exception is the certain paid content

of newspaper sites, such as the *Wall Street Journal* and content of social networking sites, which search does not have general access to.

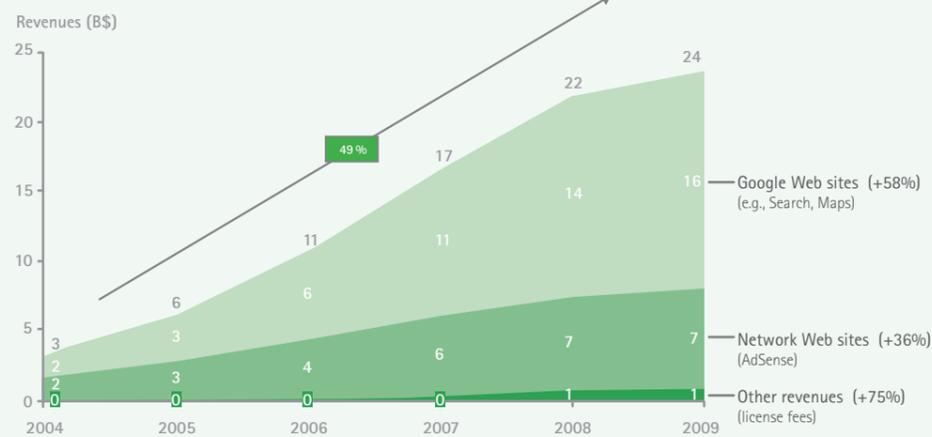
### Google – the making of a giant

Almost since the very beginnings of the Web, users have used search sites to navigate the Internet and find the content they want. Over time, the popularity of various search engines has risen and fallen, but none of them could really figure out how to monetise their assets in search – until Google came along. Google's popularity lies in the superior ability of its search engine to deliver relevant results. Leveraging this powerful asset, the company began selling advertisements against its search results, allowing it to profit directly from the engine and use the data it gathered on user behaviour to make its searches and ad placement more relevant. Google's advertising revenues have grown at

a remarkable rate in the past few years; it took in almost \$24 billion in 2009 and is estimated to reach \$28 billion in 2010 (see Exhibit 3.9).

Google's growth story has not stopped with online search. The company has relentlessly expanded its ecosystem into advertising networks, mobile operating systems, video platforms, e-mail, maps, navigation and countless other auxiliary products and services. These products and services serve to secure Google's position in the digital economy and to drive traffic to its ad monetisation engine, which generates 97% of its revenues. Its latest venture, Google TV, is an ambitious concept for entering the television space, which represents almost 40% of the \$460 billion global advertising market.

Exhibit 3.9  
Google's revenue growth 2004–2009



Source: Google

### The device-centred model

The device-centred business model is based on the popularity of devices facilitating the establishment of an entire "ecosystem" around it made up of content platforms, advertising networks and retail operations. Popular devices such as the iPod, iPhone, iPad, Xbox 360 and Sony PlayStation can give their manufacturers a strong enough position to expand their business models into adjacent areas of the value chain. The innovation, quality, branding and usability of the devices are fundamental to the value they can generate. In the mobile space, this has allowed device players to enter both data and voice services with disruptive business models attracting value to the device and away from the network provider. The leverage of certain device players in the voice and mobile data market has been further increased through exclusivity agreements with selected transport providers for the distribution and bundling of their device with the voice or data service.

A prime example of the device-driven business model is Apple and its series of devices coupled with the iTunes content platform, whose success has spawned its very own global ecosystem and achieved remarkable market shares in both device and electronic content sales.

Some multimedia device manufacturers tie certain technology conditions to access to their devices and the underlying operating systems (see Exhibit 3.10). Content providers (including application developers and music publishers) as well as peripheral device manufacturers have to adhere to sometimes very high technology conditions in order to allow their content and products to work on certain devices. Moreover, content providers and aggregators in most cases have access to device ecosystems subject to certain content conditions. Finally, device manufacturers frequently give access to their sales and marketing platforms, such as app stores, to content providers and aggregators on a revenue share basis.

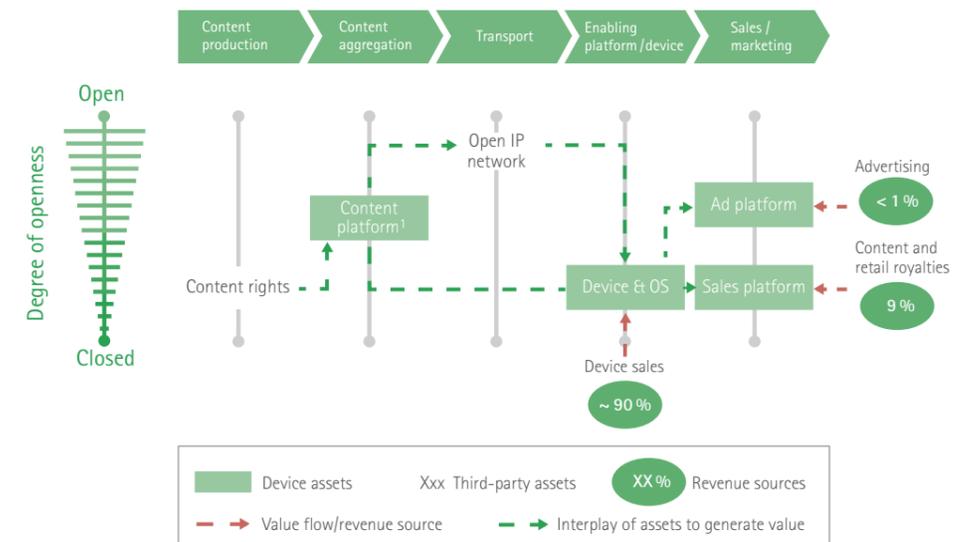


Exhibit 3.10  
The device-centred model

At the same time, device players rely on content being made available for their device ecosystems. They often have direct stakes in some content production (flagship console games or phone apps), in addition to attracting independent developers to create content for their ecosystems. Reaching scale for their device ecosystem is of paramount importance in this context, which has led certain device makers to leave exclusive, single-vendor distribution arrangements or lowering technology conditions for content and applications.

The device business model has had little relevance in the TV environment so far. Manufacturers of set-top boxes have had limited success in making devices and device-specific platforms the

centre of how consumers experience and purchase video products. A new generation of set-top boxes functioning as IP gateways in the home may change this, as they allow for seamless access to linear and Web content and allow access to content stored in personal libraries on PCs or other IP-enabled storage devices. Consumer electronic device manufacturers, particularly of Internet-connected TVs, have the opportunity to generate scale and create an asset that might enable them to exert significant influence over content aggregators' strategies to establish direct access to the consumer. It is not unimaginable that one or more manufacturers may deliver a compelling, unified, vertically integrated Internet-connected TV that does for TV consumers what the iPhone has done for mobile users.

### Apple – the creator of the device-based model

Apple devices are without a doubt unique in their design and user experience, and the company has repeatedly "made" the market with the innovative device concepts it creates. The resulting popularity of the company's devices gives Apple the strategic advantage necessary to set the access conditions to their ecosystems that best suit its own strategic interests. These conditions affect app developers, providers of music and digital media content and peripherals – and in some markets, even transport networks. This allows Apple to achieve three objectives: Ensure quality of applications, content and user experience within the ecosystem, create consumer "lock-in" effects and generate value for Apple from other parts of the value chain.

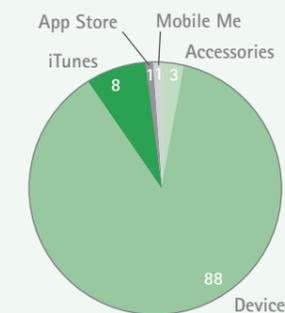
Application and digital content providers pay as much as 30% of their revenue to Apple to gain access to the sales and marketing functions of the Apple platforms. On the transport side, Apple has been able to enter into exclusive contracts with mobile operators like AT&T and Deutsche Telekom. In exchange, the operators agreed to directly subsidise the cost of the iPhone to subscribers, and to share parts of the subscriber revenues generated through the iPhone with Apple – an estimated 20% in the case of AT&T in the early days of the iPhone. In the emerging mobile advertising space, Apple has established a proprietary advertising network around its devices and claims 40% of revenues generated through its fairly new iAd service.

However, by far the largest proportion of the profit generated within the iPho-

ne ecosystem comes from the device itself, amounting to an estimated 20 times the profit Apple generates from accompanying services such as iTunes, iAd and the App Store (see Exhibit 3.11). Platforms such as the App Store serve primarily to secure the attractiveness of the devices and promote future sales.

Apple appears to be loosening the technology conditions it sets for app developers, responding to pressure from the developer community and the threat of an antitrust investigation from the European Commission. This indicates that Apple is reconsidering its openness levels in light of both competitive pressure and mounting attention from regulatory bodies, which are keeping a close eye on Apple and its openness practices. Meanwhile, the US Copyright

Office recently ruled that the practice known as "jailbreaking," or modifying an iPhone or iPad to run apps other than those sanctioned by Apple and sold through the App Store, is legal, which will affect Apple's ability to control access by developers of these apps to the ecosystem.<sup>4</sup>



Note: US market estimate 2009  
Source: Caris Et Company; Bernstein; Credit Suisse; J.P. Morgan; BCG analysis

Exhibit 3.11  
Apple iPhone ecosystem revenue split estimates

### The community-centred model

Global platforms with community features are currently reaching massive scale and influence in the media and communication space. Community platforms are typically aggregators of content, some of which is user-generated. They leverage the community's usage patterns and data to enhance the customer experience. This allows them to increase the relevance of their content and the quality of their platform's navigation capabilities, which leads to self-reinforcing network effects, as their success attracts

even more users and content providers to their ecosystem.

Social networking sites are the most prominent examples of this phenomenon. Video content-oriented platforms like YouTube and professional networks like XING and LinkedIn also fall into this category of platforms leveraging communities for their business models. These platforms generally have two primary functions relevant for users: Firstly, the aggregation and navigation of content, which is to a large extent generated by the users themselves. Secondly,

<sup>4</sup> It has been ruled to constitute "fair use" under the 1996 Digital Millennium Copyright Act

# OPENNESS DIMENSIONS

they incorporate some form of user feedback on the content either directly (commenting, posting and sharing) or indirectly (evaluation of usage patterns). Their usage data and feedback become the content used by other community members, as when Facebook users click on the "like" button, which has become a powerful recommendation feature.

The growth of communities is fuelled by people's ample need to communicate and express themselves and is facilitated by the explosion of ubiquitous fixed-line and mobile online access to these platforms. At the same time, users are locked in by the "commitments" they have made to the platforms in terms of content contributions (e.g., photos, videos), friend connections or status in a recommendation system they might have achieved. Also, certain technical standards can keep their data from being ported.

After reaching a certain scale, the platforms have one extremely important asset: an

enormous user base that has voluntarily provided a significant amount of information on itself, its consumption and its communication habits. This allows the platforms to target advertisements and own product offers based on the individual user information they possess. Usage data and user feedback information are typically protected from access by other content aggregators, community platforms and search engines. On the other hand, advertisers receive access to community platforms' advertising mechanisms, as it forms the platforms' main source of revenues.

From an openness perspective, this is a rather sophisticated way of playing on the constellations of open and closed. They open up to consumers and developers of applications to drive content and customers to their platforms and then firmly leverage the user data which they monetise for advertising sales. The platforms have created a large-scale shift from the open Internet to a more closed "fenced prairie"

setup which people use as their primary access and navigation point to the Internet.

Since scale obviously matters in this type of business model, market concentration happens quickly and leads to the emergence of players with global reach who can leverage their core assets – their aggregation platform and user community – to negotiate access condi-

tions with content providers, device manufacturers, other content aggregators and advertisers (see Exhibit 3.12).

*Since scale obviously matters in this type of business model, market concentration happens quickly and leads to the emergence of players with global reach.*

### Facebook – a new online nexus

The rise of Facebook – with now over 500 million users worldwide – has been spectacular. Facebook's registered users represent approximately one-fourth of all Internet users in the world, 35% of all users in Europe and more than 50% in the US. The power of this network is impressive: Two-thirds of comScore's Top 100 US Web sites and half of comScore's Top 100 global Web sites are integrated with the Facebook platform. In the

mobile area, the iPhone Facebook app is the second most downloaded app of all times, and more than 150 million users worldwide use Facebook applications on their mobile devices.

As Facebook continues to grow, it is even beginning to threaten Google's position as the world's largest entry point to the Web, and potentially its position as the leading provider of online advertising – and even search. Facebook has already begun setting

Exhibit 3.12

The community-centred model

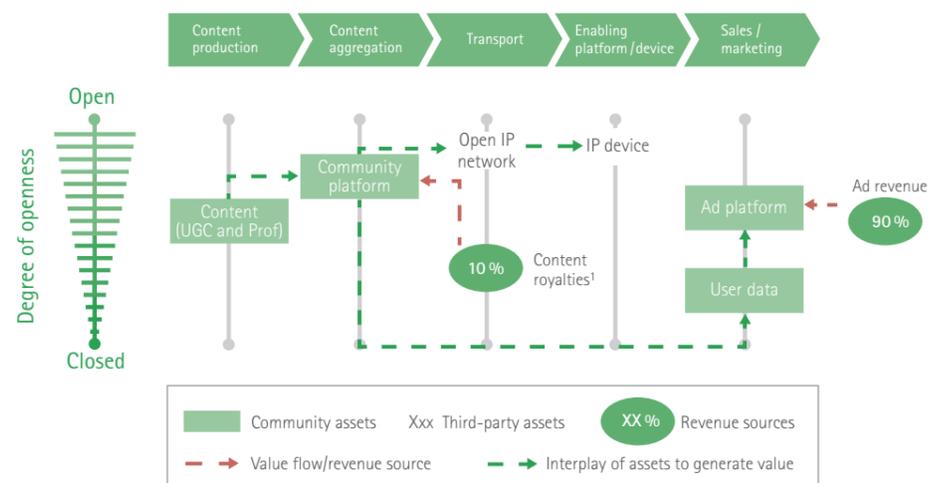
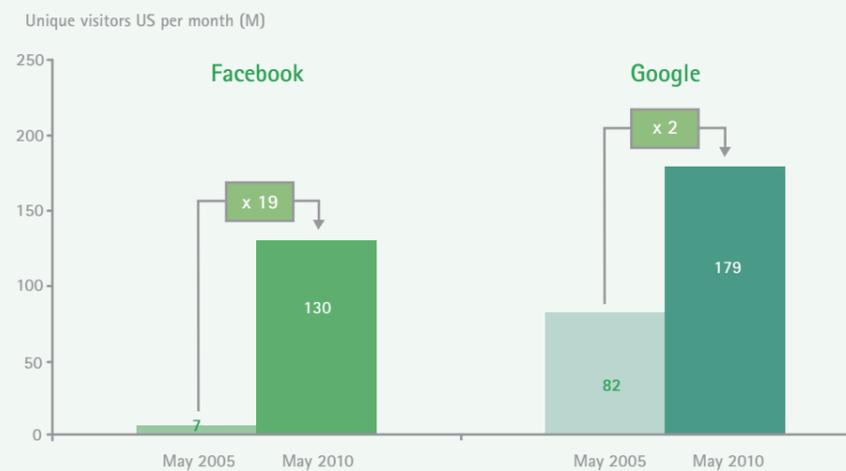


Exhibit 3.13

Communities start to take a larger share of online traffic



Source: ComScore Media Metrix Ranks Top 50 US Web Properties

its sights on the search market, recently making a deal with Microsoft to grant its Bing search engine exclusive access to Facebook's user-generated data. It is estimated that Facebook will generate \$2 billion in revenues from advertising in 2010 – six times as much as in 2008. That is a small number compared to Google's estimated \$28 billion, but Facebook is growing quickly: In May 2005, Facebook had just 7 million unique visitors, compared with 82 million for Google; but by 2010, Facebook had grown 19-fold, to 130 million, while Google had merely doubled, to 179 million (see Exhibit 3.13).

A recent area of expansion is the TV market. Facebook comes preinstalled on a number of Internet-enabled TVs, and AT&T and Verizon have both integrated the app into their interactive TV platforms. In November 2010, Facebook introduced its own universal communications solution: a social inbox for every kind of online and mobile communication, including e-mail, SMS, instant messaging and Facebook chat messages. It is obvious that Facebook has ambitions to claim the position as the central platform for all communication, content and advertising in the online and mobile space.

## Openness dynamics of the business models

Business models will always be adapting, opening and closing new assets and leverage points, gaining and losing significance in the marketplace and emerging or disappearing altogether. Technology evolves, regulatory philosophies and policies change and companies adjust the openness levels of their assets accordingly. Virgin Media recently incorporated the BBC iPlayer into its cable platform, for instance – a strategic adjustment designed to open it up to online content. Likewise, Apple's relaxation of the conditions set for its platform development tools to allow the use of Flash was an adjustment toward openness that was influenced by potential regulatory intervention. And the incorporation by AT&T and Verizon of Facebook into their interactive TV platforms is an adjustment of openness levels designed to gain access to a high growth asset and secure relevance in the online space.

*It is critical to understand that none of these five business models are eternally stable, stand-alone models that simply sit beside each other and operate entirely within their own environments.*

It is critical to understand that none of these five business models are eternally stable, stand-alone models that simply sit beside each other and operate entirely within their own environments. The relative openness of one player will invariably impact the ability of some other player to establish and leverage its assets. Companies are moving aggressively to pursue opportunities outside of their traditional environment and to enter adjacent industries in direct competition with the entrenched players. As these strategic battles unfold, the openness landscape will change, the importance of assets and strategic positions will shift and the third parties of today will become key asset holders of tomorrow – and vice versa.



# P4

part 4

OPENNESS DEVELOPMENTS

## OPENNESS DEVELOPMENTS – Strategic shifts and the emerging openness landscape

The ever-changing dynamics within the industry, driven by technology disruptions, ecosystem competition and consumer behaviour spur new openness developments. New "strategic battlefields" emerge in which different business models compete to protect strategic market positions, establish new ones or re-establish those they have lost. Around these battlefields, the growing or diminishing importance of certain critical assets and their availability to third parties becomes visible. Growth and value creation can shift to different steps of the value chain while significant changes unfold in competitive positions reflected in new openness levels along the digital value chain. These shifts can be observed through three key "strategic battles" that are having a profound impact on the entire industry:

- **The battle for content navigation.** All of the typical business models are pursuing the same strategic position of being the primary gateway for consumers to digital content in order to strengthen their competitiveness
- **The battle for consumer access.** The growth of Web-based business models and Internet traffic raises fundamental questions about the terms of access to consumers over transport networks
- **The battle for consumer data.** The accelerating cross-platform collection and monetisation of consumer data creates global powerhouses in advertising, content and commerce – setting the terms for access in the digital economy.

All business model types are participating in these developments to a greater or lesser extent as they seek to expand their reach across the value chain and strengthen their strategic positions. These battles are being waged on different terms than in the past as the services are becoming global in scale and are decoupled from the transport networks. Those networks, in turn, face competition not only from other infrastructure players but also from the new, often global ecosystems being built around mobile devices, over-the-top platforms and cloud-based environments.

As a result, the key assets rising in importance as drivers of innovation and growth include content rights, software platforms, navigation services and consumer data. Access to these assets is already critical for large segments of the growing digital economy. It will become even more so as vested industry players increasingly become dependant on new types of assets to remain competitive and unlock new revenue sources associated with innovative value-added services. As markets converge further and companies expand their reach into each other's business environments, traditional asset holders are becoming third parties to the new assets increasingly needed to innovate and create value.

*These battles are now being waged on different terms than in the past as the services involved are becoming global in scale and are decoupled from the transport networks. Those networks, in turn, are facing competition not only from other infrastructure players but also from the new ecosystems being built around mobile devices, over-the-top platforms and cloud-based environments.*

### The battle for content navigation

Regardless of all technological developments and changes in consumer behaviour, content remains king. The battle for the primary consumer access point to digital content is intensifying. Every major type of industry player (*distribution, aggregation, search, device and communities*) is pursuing this central role in a converged environment. Over-the-top content platforms will play an increasingly important role and will be operated by both new and existing aggregators. Device manufacturers are securing direct access to content and building advertising capabilities into their device-based ecosystems. Search providers are entering the TV space, offering search-based linear and digital video navigation. Community platforms, with their enormous global user base, are positioning themselves as an important gateway to content. Distribution-centred players are upgrading their capabilities with a new generation of TV-based platforms bringing linear, Web and personal content together and are extending their aggregation role into the on-

line environment, e.g., by making their TV-based content accessible online for their subscriber base ("TV Everywhere"). These developments are fundamentally changing the game for the allocation of content rights, distribution and advertising.

### Content rights are on the move

As the paths for delivering content to consumers vary across different devices, transport networks and platforms, potential distribution partners for holders of content rights proliferate. Although linear television distribution is still the most lucrative model for most prime-time material, new contenders capable of changing the decades-old system of content rights allocation are emerging. This does not apply only to "catalogue" or "long-tail" content. It increasingly relates to the right to first run movies and major sports events. This race for content sees traditional aggregators, over-the-top platforms, search providers, device manufacturers and distribution players battling for the valuable content rights and involves companies such as Google, Yahoo, Sony and Apple, who are trying to enhance the appeal of their global platforms.

These new players have secured significant content deals during the past year. The online streaming service Netflix recently spent \$1 billion to secure streaming rights from Epix (a joint venture of Viacom, Lionsgate and MGM) for material 90 days after pay-TV debut. YouTube's 2 billion views a day have made it a viable partner for content distribution, and its purchase of global exclusive IP rights<sup>1</sup> for live streaming made the 2010 Indian Premier League cricket competition

<sup>1</sup> Except for the US, where the rights are held by Willow TV



the first major sporting event to be streamed live across the globe. The event attracted 50 million views from 200 countries. A Google spokesman said this success will lead to more live sports and events on YouTube. Global platforms are not alone in securing sports rights – distribution-centred players are also entering the content game. Comcast has bought NBC, a pay cable powerhouse, acquiring a free to air network and gaining access to vast amounts of programming and consolidated advertising power. Deutsche Telekom has secured the IP rights<sup>1</sup> for the Bundesliga, Germany's premier football league. It produces its own live coverage commentary and related material that serves as one of the main pillars of its IPTV platform growth.

Major shifts of content rights will influence the industry in many ways. In particular, they could strengthen the competitive position of

the new online aggregators and community platforms as they are able secure blockbuster content for their platforms on a larger geographic scale than before. Online distribution is becoming a real alternative to linear broadcasting, but still faces many hurdles. As Jeff Weber of AT&T puts it; "It is the dance between the service providers [cable, satellite] and the content providers, and because there is so much money in the industry, that can't get out of balance".

*Major shifts of content rights will influence the industry in many ways. In particular, they could strengthen the competitive position of the new online aggregators and community platforms as they are able secure blockbuster content for their platforms on a larger geographic scale than before.*

The European system of selling content rights via different national markets along with a fragmented rights clearance systems represents a certain roadblock for a large-scale shift of content rights to international and global online players. This situation could, however, change, as the European Union's Digital Agenda for Europe rates "opening up access to content" as a priority in facilitating a single digital market. The European Commission laments that fragmentation of content and commerce markets within Europe is the reason for the continent's low share of successful global Internet businesses: Only four of the top 54 Web sites in Europe in terms of traffic are of European origin<sup>2</sup>.

Simpler, technology- and platform-neutral licensing of audiovisual content on a pan-European basis would be a step towards creating more scale for content-driven business models and a possibility for content rights holders to reach a broader audience. Although rights holders would remain free both to differentiate pricing and to restrict their licenses to certain territories, this change would generally facilitate a shift of rights towards larger Web-based platforms. This represents an opportunity for European companies active in aggregation to achieve more scale but would also enable the current global players to more easily expand across Europe. Online and device-based models could strategically secure pan-European content rights to drive their advertising and device revenues, which could handicap the fragmented landscape of local aggregators and distribution players in seeking content rights for their respective regional markets.

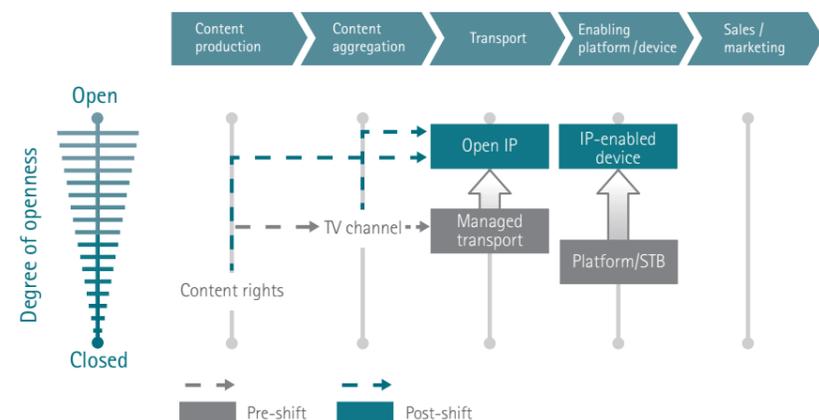
*This represents an opportunity for European companies active in aggregation to achieve more scale but would also enable the current global players to more easily expand across Europe.*

#### Infrastructure agnostic "over the top" on the rise

Over-the-top (OTT) video is rapidly moving mainstream and may be entering a second phase of growth fuelled by consumer behaviour and technological developments like increased bandwidth, ubiquitous Internet access and the shift in content rights described above. The trend is facilitated by content producers' and aggregators' access to the open Internet as a distribution alternative. This allows them to bypass two critical assets along the value chain – the managed linear distribution network and the related devices, such as set-top boxes, needed to receive the transport signal. This has increased the openness levels of some key assets in video distribution (see exhibit 4.1). Content- and price-conditioned access to managed networks and set-top boxes will become less prevalent as OTT players establish proprietary aggregation platforms over the IP layer and establish direct customer relationships. This trend is also being driven by changed video content consumption patterns. Consumers – especially digital natives – demand to choose the time, place and device for watching content, preferably for free. This echoes earlier developments in data, where products and services sold online have for some time been largely decoupled from distribution network providers.

<sup>2</sup> "A Digital Agenda for Europe" COM(2010) 245, 19 May 2010

Exhibit 4.1  
Shifting access of content aggregators to distribution assets



*70% of all Internet users already watch online video. Around 22% of all global online consumers already own, or plan to buy within the next year, an Internet-connected television set.*

70% of all Internet users already watch online video. These habits, partially driven by the increasing penetration of OTT-enabled viewing devices, are starting to migrate to the TV screen. Around 22% of all global online consumers already own, or plan to buy within the next year, an Internet-connected television set.<sup>3</sup> While Asian markets are leading in global online video consumption, this trend is also rapidly unfolding – and showing the first signs of potential value shifts – in the US and Europe. OTT is becoming a real alternative to a cable or satellite subscription for US consumers. In 2009, around 1.5 million households substituted OTT services like Hulu or Netflix for their multi-channel cable or satellite

subscription. By 2014, this is expected to increase to 8 million households<sup>4</sup> (see exhibit 4.2). Analysis of younger demographics suggests that this trend will go even further than current household forecasts suggest. 30% of Netflix subscribers aged 18–24 use their online subscription instead of cable or satellite. Since monthly online subscription prices are around \$10 – less than 30% of the basic cable fee – this is likely to have a significant revenue impact.

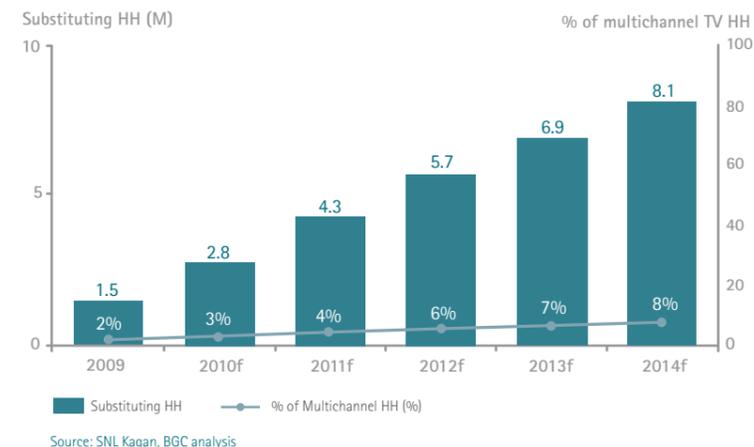
*In 2009, around 1.5 million households substituted OTT services like Hulu or Netflix for their multi-channel cable or satellite subscription. By 2014, this is expected to increase to 8 million households.*

The OTT trend has also hit Europe, with rapidly increasing offerings of online content. Public broadcasters like the British BBC and the German ARD/ZDF have been active in OTT for some years.

<sup>3</sup> Nielsen, How people watch, 2010

<sup>4</sup> SNL Kagan

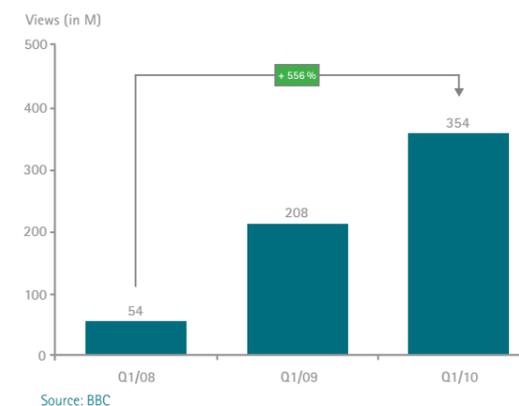
Exhibit 4.2  
OTT substitution development in the US



Most private broadcasters are also offering online content, and two of Europe's largest broadcasting groups, RTL and Pro7/Sat1, are planning an online joint venture. UK online video viewing grew by 36% in the 12 months up to the first quarter of 2010,<sup>5</sup> – four times the growth rate of traditional TV viewing<sup>6</sup>. YouTube still claims the lion's share of the market, but BBC is a runner-up: The audience using

the BBC iPlayer has grown steadily over several years, reaching 354 million views in the first quarter of 2010 (see exhibit 4.3). An increasing share of iPlayer viewing is being done through the TV rather than the PC – via either the Virgin cable platform or an OTT-enabled device like the Sony PlayStation or the Nintendo Wii. This share represented around 24% of requests in September 2010.

Exhibit 4.3  
Number of BBC iPlayer requests



<sup>5</sup> comScore statistics for February 2010

<sup>6</sup> BARB Q1 2010 rating figures; including linear, digital and VoD services

### Web search-based business models enter TV content navigation

As video content increasingly migrates from linear to IP-based, so too can successful business models from the Internet space be transferred to TV. The app menus are already pre-installed on the latest Internet-connected TV sets, videos can be watched on an array of stationary and mobile devices and search players are preparing to bring their business model to the TV screen. TV content transported over open IP will be at the centre of TV search (over-the-top content). There are also plans to couple it with traditional broadcast content, and GoogleTV is actively forging alliances in this new market in order to build a powerful ecosystem for its search and advertising machinery. Google plans to incorporate its GoogleTV platform into as many IP-enabled devices as possible. The initial list of partners building the GoogleTV ecosystem includes Sony, Intel, Adobe, Logitech, Dish Network, Netflix, CNN and BestBuy (see Exhibit 4.4).

The rise of TV search providers is set to give users more direct access to content, bypas-

sing existing aggregators and so potentially weakening their leverage points by shifting the central navigation role towards the search players. This could be particularly painful for OTT players as it allows more efficient access to long-tail content – an area in which they recently identified a competitive advantage over traditional TV aggregation. In the US, ABC, CBS, NBC, Fox, Viacom and the online platform Hulu have all refused to grant GoogleTV access to their online content. They are concerned about increased piracy since GoogleTV has until now refused to block access to bootleg movies and TV shows on its platform. It may also impact network operators, who could see their role in navigation formerly held through electronic programme guides on their digital platforms move into the search providers' cloud. Only one SAT company, Dish Network, has so far signed up for the launch of the platform.

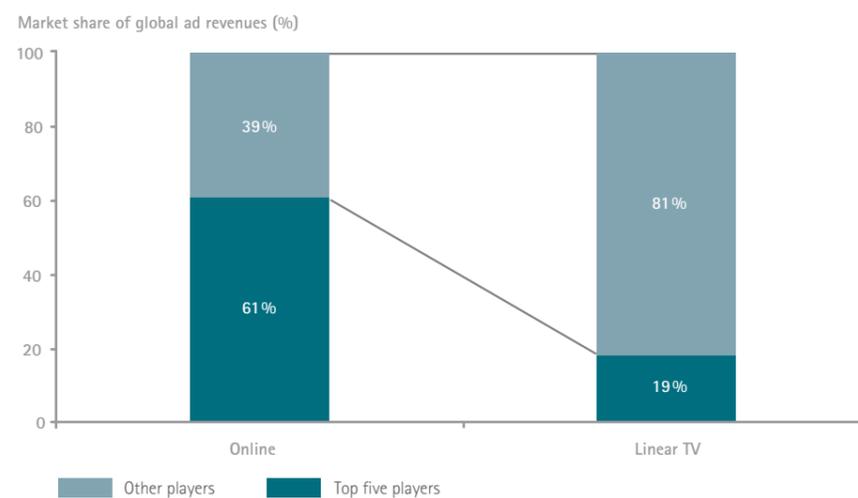
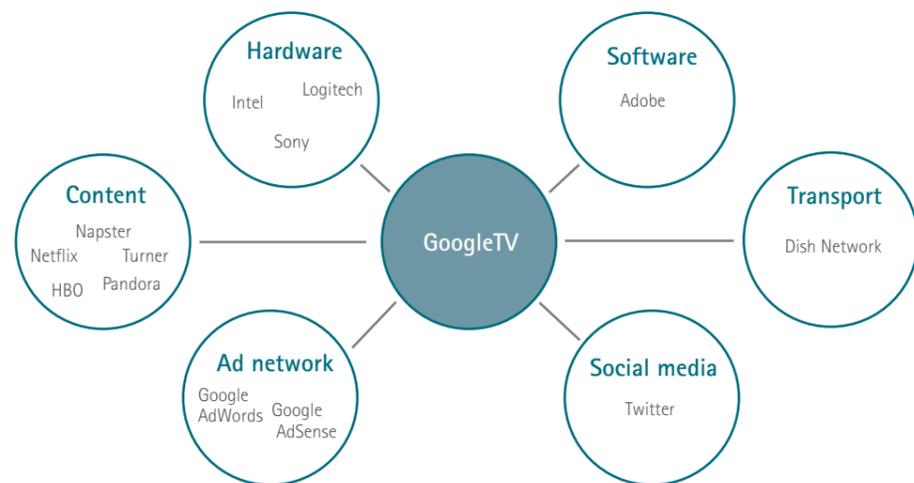
*In the United States, ABC, CBS, NBC, Fox, Viacom and the online platform Hulu have all refused to grant GoogleTV access to their on-line content.*

Increased opportunities to search on TV could have implications for distribution of advertising revenues. Search players have over 60% of online advertising and 24% of mobile advertising income. Their search and advertising core competence could also be leveraged in the TV space as the content shifts from linear to digital and becomes searchable like on the Web. If search providers enable advertisers to target their ads more precisely than traditional TV, because the search input means they know more about users, they have a good chance of tapping into this large revenue pool. This could lead to increased global market concentration of TV advertising revenues. Comparing the revenue share of the top five advertising players on the Internet, at 61%, with that of the top five in the global linear TV market, at 19%, shows the potential implications of such

a shift (see Exhibit 4.5). Search providers could in time take over the administration of large parts of the TV advertising budget through their extensive advertising networks, combining search advertising with dynamic, targeted ad insertion into premium and long-tail content. Experience in the data world would equip a company like Google to take on a central role as an advertising platform operator. Eric Schmidt, CEO of Google, says "Our advertising is targeted; ... we can do even more relevant television advertising, which should be worth a lot of money."

*Eric Schmidt, CEO of Google, says "Our advertising is targeted; ... we can do even more relevant television advertising, which should be worth a lot of money."*

Exhibit 4.4  
GoogleTV ecosystem



Note: Includes estimates; top five Internet players 2009: Google, Yahoo!, Microsoft, AOL, Facebook; top 5 linear TV players 2008: NBC Universal Inc., Walt Disney Corp., RTL Group, CBS Corp., Viacom  
Source: Magna Global; SNL Kagan; TechCrunch; press; company information

Exhibit 4.5  
Global Internet and television ad revenue concentration

### "Fenced prairie" devices organise services

Numerous business models base their strategic leverage on a device with a unique function or design, strong branding or a status symbol function attached to it. These devices can be established as potential access points to a content ecosystem. Advanced devices are one of the drivers of the OTT development described above, as the penetration of Internet-enabled game consoles and connected TV sets makes it possible to view this content on the TV screen. Device manufacturers, however, seek to drive this traffic into their "fenced prairie" ecosystems such as the iTunes platform or Xbox LIVE. This enables them to establish a transactional relationship with the customer as well as to profit from advertising revenues linked to the content.

*Device manufacturers, however, seek to drive this traffic into their "fenced prairie" ecosystems. This enables them to establish a transactional relationship with the customer as well as to profit from advertising revenues linked to the content.*

An operating system or proprietary platform is commonly used to control which content is made (with which development tools). If successful, the device player can mandate underlying business models around digital content and shift online traffic from the open Internet to his proprietary device ecosystem (see exhibit 4.6). A shift of this nature can be observed in the emerging connected TV market, where preinstalled apps provide the content access instead of a browser.

Exhibit 4.6  
Shift of online traffic to device based ecosystems

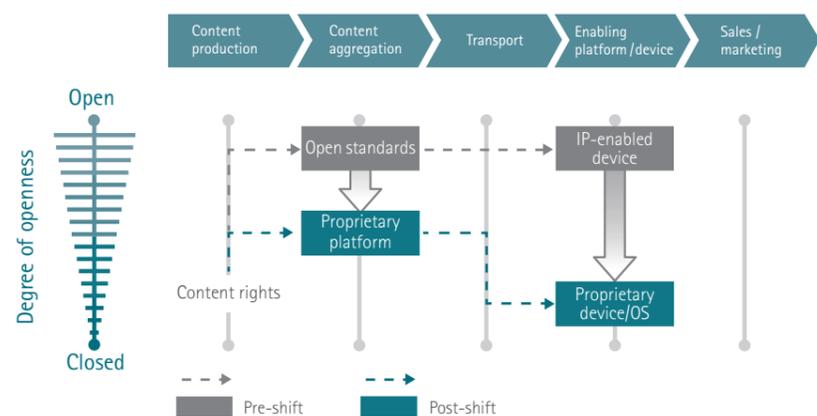
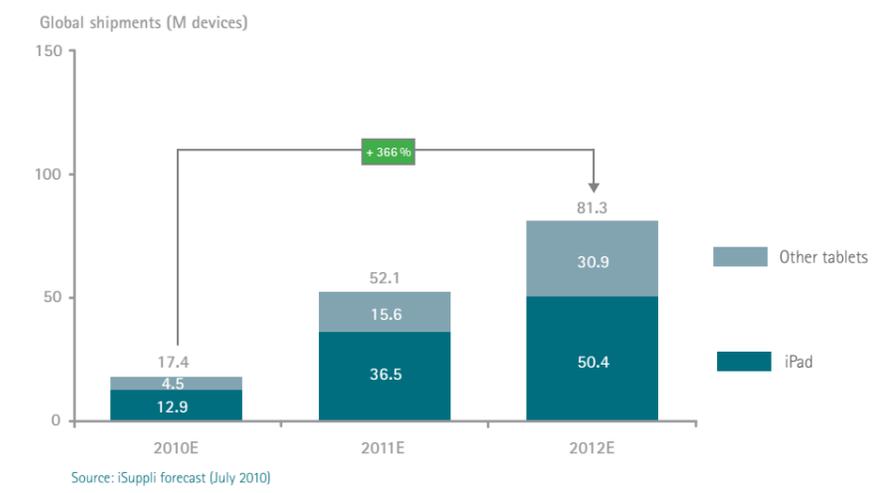


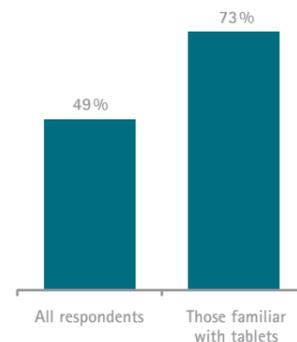
Exhibit 4.7  
Tablet device sales forecast



The success of the device-based model can be observed in the phenomenal growth of the Apple iPod and iPhone, and more recently of the iPad and other tablets (see exhibit 4.7). The new converged tablet devices address all types of media consumption over both mobile and fixed-line transport networks. A recent global study by BCG found

that up to 70% of respondents planned to buy a tablet device, such as an iPad or a Samsung Galaxy Tab, within the next one to three years. Aside from reading digital publications and accessing the Internet, more than 70% of respondents plan to use the tablet to watch TV and video content, making it the first truly converged device (see exhibit 4.8).

### How interested are you in purchasing a tablet within three years?



Source: BCG e-reader survey (n = 12,717, March 2010)

### Other than reading, what do you plan to use it for?

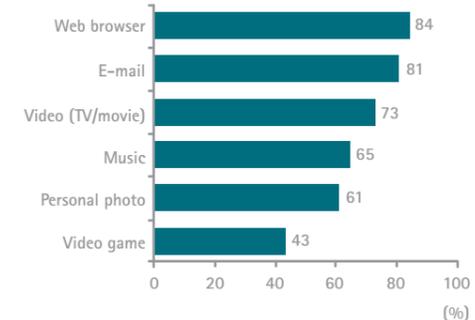


Exhibit 4.8  
Consumer purchase and usage intent for tablet devices

*Aside from reading digital publications and accessing the Internet, more than 70% of respondents plan to use the tablet to watch TV and video content, making it the first truly converged device.*

Device manufacturers are rapidly expanding their portfolio of devices to serve all aspects of video, print, gaming and communication within one integrated ecosystem. This device-centred business model is rapidly being imported into the TV space through connected TV sets, game consoles and other Internet-enabled peripheral devices. Manufacturers have entered into partnership with content aggregators for access to digital content, often localised to specific markets. In Germany, Sony Bravia TV sets come with access to online content from ARD/ZDF, Pro7/Sat1, Eurosport and YouTube running via the HbbTV platform. In the UK, Microsoft Xbox owners can watch Sky content through their console – a functionality that will

be extended to the PlayStation 3 by the end of 2010. Similarly, CANAL+ is available to Xbox owners in France, and Sony has secured access to HBO content for its PlayStation 3 in the US.

*By 2012, up to 40% of European homes are expected to have some kind of connectable device – a mixture of consoles, connected TV sets and stand-alone devices.*

Content distribution and digital services are expected to continue growing through device platforms, especially the continued penetration of connected televisions. Sales of Web-enabled TV sets more than doubled between 2009 and 2010 and are expected to more than quadruple by 2014, when there will be a global installed base of around 500 million connected TV sets (see exhibit 4.9) This adds to the 160 million latest-version consoles (including 40 million in Europe) already installed and other developing devices such as AppleTV. By 2012, up to 40% of European homes

are expected to have some kind of connectable device<sup>7</sup> – a mixture of consoles, connected TV sets and stand-alone devices.

Combined with the accelerating OTT trend, this proliferation of device-based ecosystems is set to weaken the strategic position of the vested distribution-centred players in TV and video. Web- and device-based business models in data, music, advertising and publishing will increasingly challenge distribution companies in their role as the primary access providers to content.

### Distribution ups its game

The distribution-centred model is defending its position with new and innovative platforms devised to compete with the global OTT, search and device players. Transport providers are upgrading their content navigation capability

with a new generation of TV-based IP platforms bringing linear, Web and personal library content together. Secondly, network providers are extending their aggregation role into the online environment, e.g., by making their TV-based content offerings also accessible online to their subscriber base (*“TV Everywhere”*). While mostly observed in the US, these strategies are increasingly evident in Europe. They typically involve a major upgrade of platform capabilities and an extended content/service offering including applications from third-party providers. To secure access to the blockbuster applications, community platforms or online content essential to attracting and retaining customers and a gradual shift towards more open platforms are needed (see exhibit 4.10).

The new services make distribution companies active participants in the convergence game as they drive integrated triple- and quadruple-play service bouquets to the market.

Exhibit 4.9  
Global Web-enabled TV set sales

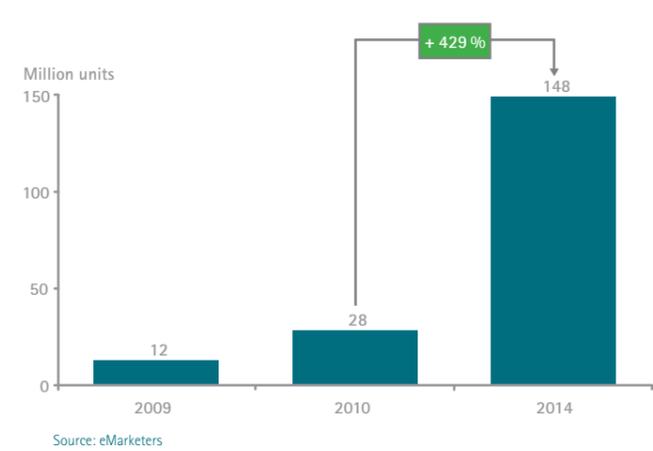
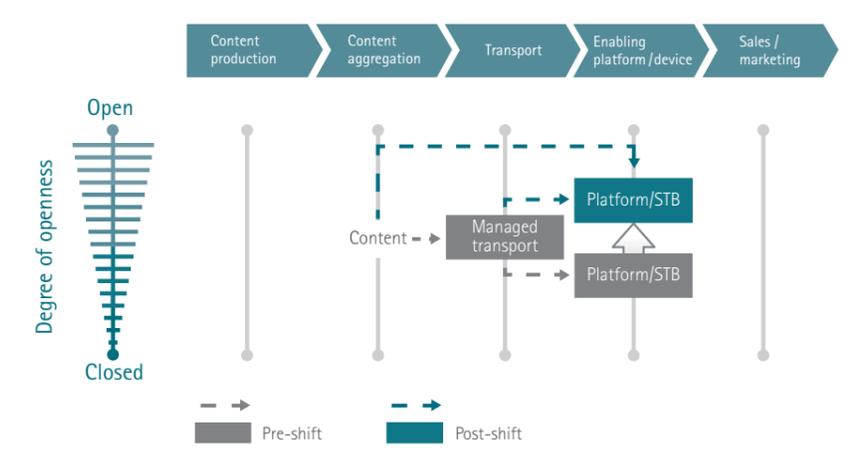


Exhibit 4.10  
Shifting openness level of transport platforms



<sup>7</sup> IDATE research forecast

*To secure access to the blockbuster applications, community platforms or online content essential to attracting and retaining customers and a gradual shift towards more open platforms are needed.*

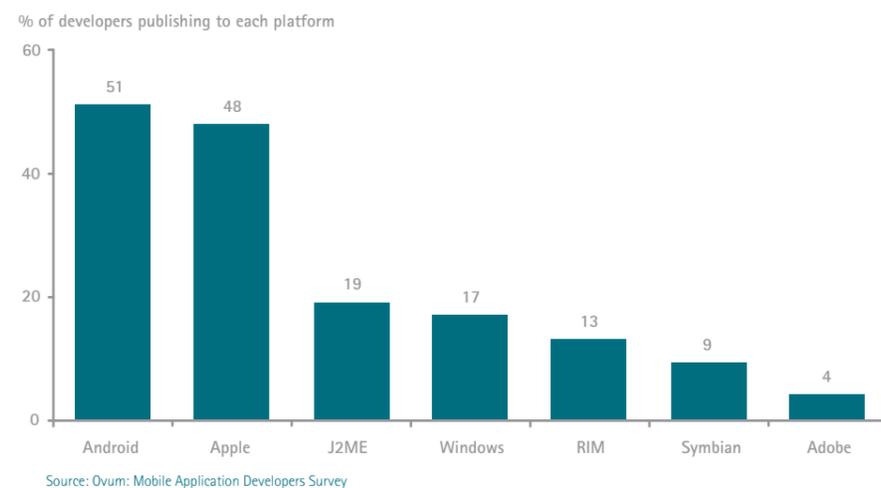
App development will be an important element of the future competitiveness of distribution-centred companies' offerings. This applies both to mobile operators and to providers of video content over cable and IPTV. Verizon and other network providers are moving on this trend with their own TV "app stores." Verizon's Widget Bazaar enables access via your TV to an app platform offering digital content and services such as Facebook, YouTube and Twitter. Attempting to speed development and increase scale, it recently opened the platform to application developers on the basis of a 70/30 revenue-sharing model similar to Apple's App Store. Gaining access to application development capacity will be one of the key challenges of distribution-centred players go-

ing forward. App developers usually only develop for a handful of platforms and the first slots are already reserved for the large mobile ecosystems (see exhibit 4.11).

Distribution players are pursuing a variety of online OTT content strategies. In the US, Comcast founded its own ad-supported OTT platform that offers a wider variety of online TV content plus access to Comcast programming. In the UK, Virgin Media integrated the BBC iPlayer platform into its digital cable offering in 2008. While integration of a third-party online on-demand platform directly into one's own user interface appeared risky, Virgin's strategy was based on its belief that consumers would increasingly demand time-shifted OTT material. This made it better to have the iPlayer as part of its platform rather than risk losing customers to other services. Most distribution-centred companies are therefore developing platforms that are more open to innovative content and applications.



Exhibit 4.11  
Developers' application platform preference



### The battle for consumer access

There is an unprecedented need for network IP-transport capacity and network performance to enable new Web-based business models. Converging environments and the surge in consumer usage driven by new devices and services, such as mobile Internet or (high-definition) video streaming, or interactive applications such as gaming on smartphones and tablets, have created a traffic explosion on both fixed-line and mobile networks. Distribution companies are challenged both to enhance the quality and capacity of their networks and platforms to serve their own client base effectively and to enable third-party online content and service providers to reach their customers over the public Internet.

*Distribution companies are challenged both to enhance the quality and capacity of their networks and platforms to serve their own client base effectively and to enable third-party online content and service providers to reach their customers over the public Internet.*

This growing demand for IP capacity will, in principle, strengthen the strategic position of the transport archetype, spurring new quality transport services and revenue schemes to accommodate the growth needs of Web-based business models while rewarding future investment in next-generation infrastructure. At the same time, any IP transport leverage points are counterba-

lanced by net neutrality principles aimed at avoiding discrimination between third-party service providers and preserving an open Internet that allows consumers to access any service or content made available over the public Internet.

### The net neutrality debate

The role of transport networks as the key enablers of continued growth in public Internet-based products and services has become the focus of the public and political discussion. Often referred to as the "net neutrality debate," this discussion essentially concerns the terms that should govern content and service providers' access to consumers via the public Internet through mobile and fixed-line networks. Can the access be differentiated on the basis of the type of content or services being delivered? What are the minimum quality requirements for Web services in order for them to be received and used reliably? Can different levels of transport service have different price tags? Should the content provider or the consumer pay?

*Often referred to as the "net neutrality debate," this discussion essentially concerns the terms that should govern content and service providers' access to consumers via the public Internet through mobile and fixed-line networks.*

Opinions range from "net neutrality hardliners" who reject any differentiation of access to those who believe that transport providers should

be allowed to offer different service and price levels to both consumers and content providers. Ed Vaizey, the UK communications minister, recently argued that Internet service providers should be allowed to abandon net neutrality and favour one content provider over another, provided that they inform customers. Vaizey said that a lightly regulated Internet was "good for business, good for the economy and good for people."

*Vaizey said that a lightly regulated Internet was "good for business, good for the economy and good for people."*

Google and BBC, backed amongst others by Facebook, Twitter and Sony, have warned against abandoning net neutrality and allowing ISPs to differentiate the terms of content delivery, arguing that it stifles online innovation. In the US, however, Google recently adjusted its position, suggesting that it is ready to support some differentiation of net neutrality principles between types of networks. In a joint policy statement with Verizon, it called for different principles on mobile and fixed networks – in effect relaxing net neutrality on mobile in view of current wireless capacity constraints. The European Commission states<sup>8</sup> that network operators and service and content providers should be allowed to explore innovative business models, leading to a more efficient use of the networks and creating new business opportunities at different levels of the Internet value chain.

Transport operators' ability to manage traffic is considered essential, not only to opti-

mise the provision of "best-effort services" on the open Internet, but also to allow the development of special managed services. According to the European Commission, consumers should, however, be fully informed about any traffic management practices so they can make informed decisions as to the transport provider of their choice.

The revised European regulatory framework for electronic communications indeed includes specific principles designed to prevent the degradation of services and the hindering or slowing of traffic. It also provides for more explicit transparency measures. The EC further states<sup>9</sup> that providers (in Europe) "have upheld the principle of open access, i.e., end users may access most of the applications and services of their choice." The system (of infrastructure competition) as a whole, comprising multiple operators, should ensure that European consumers are able to easily access and distribute content, services and applications of their choice.

Without planning to impose strict legislation on traffic management for this purpose, the EU is nevertheless determined to uphold net neutrality as a check on discriminative anti-competitive behaviour. The European competition commissioner, Joaquín Almunia recently stated that "Operators can always differentiate data to guarantee quality of service or to protect their networks from congestion and security threats. But, apart from these forms of maintenance, I will not accept practices that distort competition and discriminate among market players."

These policies aim to give consumers information enabling them to make informed

choices and allow national regulatory authorities to set minimum service quality requirements on electronic communications network operators.

### Future consumer access strategies

Due to uncertain medium-term investment prospects, network operators will be wary of the risks involved in massive infrastructure projects. They are investigating other ways of dealing with increased network use such as off-loading mobile data traffic onto Wi-Fi networks where possible, or limiting download volumes. Partnerships between operators, such as Telenor and Tele2's teaming up to roll up LTE in Sweden, are also being investigated. Current competition levels and price trends mean there is little chance of an increased *consumer* spends for broadband access. While global traffic through mobile networks grew by 158% from 2008 to 2009, operator revenue from mobile data services grew by only 16%. This was due mainly to the "all-you-can-eat" flat-rate pricing model adopted in times of overcapacity. Operators – least in mobile services – are slowly moving away from this model. O2, whose UK voice plans formerly all included unlimited data packages, now offers a tiered pricing scheme with caps at 500 MB, 750 MB and 1 GB, for instance. Such systems will increasingly relate consumers' contributions to cost coverage to their usage patterns.

Online providers of products and services have business models that are firmly founded in the performance of the networks. Market players and policy makers have engaged in a heated debate about the introduction of dedicated high-

<sup>8</sup> Neelie Kroes European Commission Vice President for the Digital Agenda "Net neutrality – the way forward" European Commission and European Parliament Summit on "The Open Internet and Net Neutrality in Europe" Brussels, 11 November 2010

<sup>9</sup> idem

performance services such as data highways for HD video streaming. To use these services, content providers could be charged for the traffic they generate, which would enable network owners to cover part of their investment in performance improvements. In reality, payment for performance is already in practice. Content and service providers frequently enter into direct peering agreements with ISPs to bypass congestion on the Internet core. Content delivery networks (CDNs) also help speed up latency-sensitive video traffic by placing content on the "network edge," closer to the consumer. These peering agreements relate to traffic that is actually asymmetric, e.g., an end user sends a few bits requesting a streaming movie and the content source sends a flood back. This asymmetry affects the economics of peering; peering relationships therefore often contain restrictions on how balanced the traffic exchanged must be. The relationship between paid peering and net neutrality is a matter of debate; however, peering is an effective means for content providers, especially smaller ones who would otherwise would have to pay for more expensive transit bandwidth through the Internet core to improve their services.

Since incorporating preferred treatment of data in network services is controversial according to current policy on net neutrality, policy discussions will determine the extent to which such services become available in the future. The transport network operators' future strategic options depend strongly on this development. Network performance management is already a key priority for both content and network infrastructure providers, as it the key to increasing revenues through new innovative business models. Operators are likely to gain the right to institute some forms of preferential data handling service, but it will likely

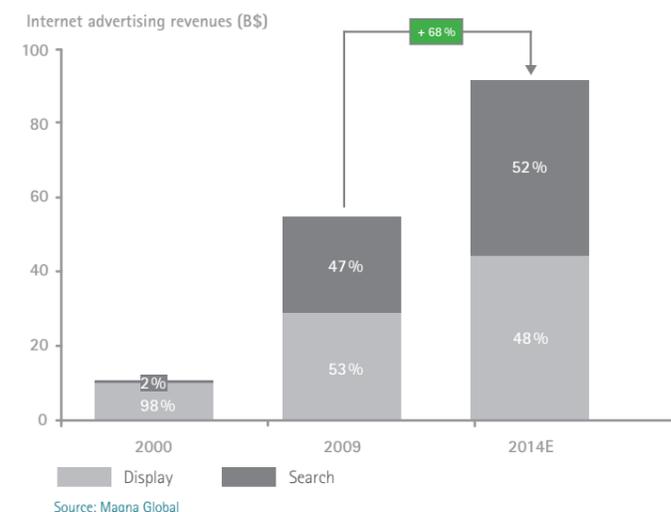
be under close scrutiny of regulators and will need active support from content and service providers as well as the affected consumers.

### The battle for consumer data

Ownership of and access to consumer data is becoming the focus of a true battle between Web players such as search and community operators. It is also an important driver of content aggregators' online strategies, as the direct customer relationships over proprietary platforms and the customer data generated provides them with a premium product for advertisers. It is therefore a strategic battle for advertising revenues, commerce revenues, consumer relationships, Internet identity and market influence. Consumer behaviour blueprints are being created every day. Information on what you buy, whom you talk to, what you like, what you watch and where you are is being continuously collected and turned into valuable data. Many companies, not only Facebook and Google, participate in this game. Online retailers, content providers, auction platforms, digital content stores, transport providers and device manufacturers are all collecting and analysing data to optimise their own business models and create better product or service propositions or more relevant personalised advertisements.

Collecting data is nothing new, but the sheer scale, cross-platform nature and monetisation perspectives are relatively recent phenomena associated with the growth of the digital economy and Internet use. The value of this data is demonstrated by the growth in online advertising, with targeted ads based on who you are, where you are or what you are searching for (see exhibit 4.12).

Exhibit 4.12  
Internet advertising revenues



Global online advertising revenues are set to surpass \$90 billion in 2014, with digital content breaking the \$50 billion and online retail revenues the \$1 trillion mark. User data therefore carries a lot of value, as it can help steer revenues in one direction or another. To be at the centre of digital consumption is to be in a prime position to profit from the multitude of datasets generated every day on the Internet. How this data is treated, how portable it is and who gets access are at the central questions of openness, competition and consumer interest.

Social networking sites such as XING, Facebook, LinkedIn or Twitter all have business models built on consumer data voluntarily surrendered by users. These models have recently been under scrutiny with regard to their privacy policies, portability of data and interoperability with other applications or Web sites. Each is a "fenced prairie." Once entered, data is not easily

reclaimed. Information is locked in and full control denied to users by site operators. The more central the platform becomes to a user's Internet usage, the stronger the lock-in effects and monetisation possibilities of the operator. The founder of the Internet, Sir Tim Berners-Lee, calls this closedness of social networks one of the threats to the open web. "Social-networking sites present a different kind of problem. [...] The sites assemble these bits of data into brilliant databases and reuse the information to provide value-added service – but only within their sites. [...] Each site is a silo, walled off from the others. Yes, your site's pages are on the Web, but your data are not."<sup>10</sup>

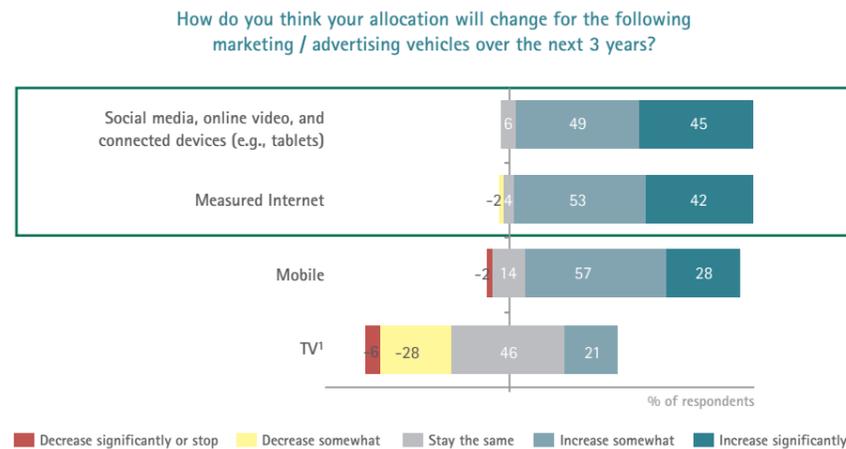
*The more central the platform becomes to a user's Internet usage, the stronger the lock-in effects and monetisation possibilities of the operator.*

<sup>10</sup> Scientific American, Long Live the Web: A Call for Continued Open Standards and Neutrality

Facebook realises, as Google long has, the value of being the central gateway to the Web. With European market shares in usage of 95% and 70% in their respective segments, they are battling for this very position. A current conflict between the two companies was sparked by Google's decision to deny Facebook access to its contacts APIs. This move as a response to Facebook's policy of not allowing the export of Facebook contacts to

Google, or any other company for that matter. This means that Facebook users can no longer import Gmail friends onto the platform. What might seem an insignificant feud over contacts is part of a strategic battle to become the Web's default social profile. Reduced interoperability and openness of data on the Web may result from this battle of giants as smaller companies could be forced to choose sides on with whom to partner with.

Exhibit 4.13  
Advertising shift towards  
new digital media formats

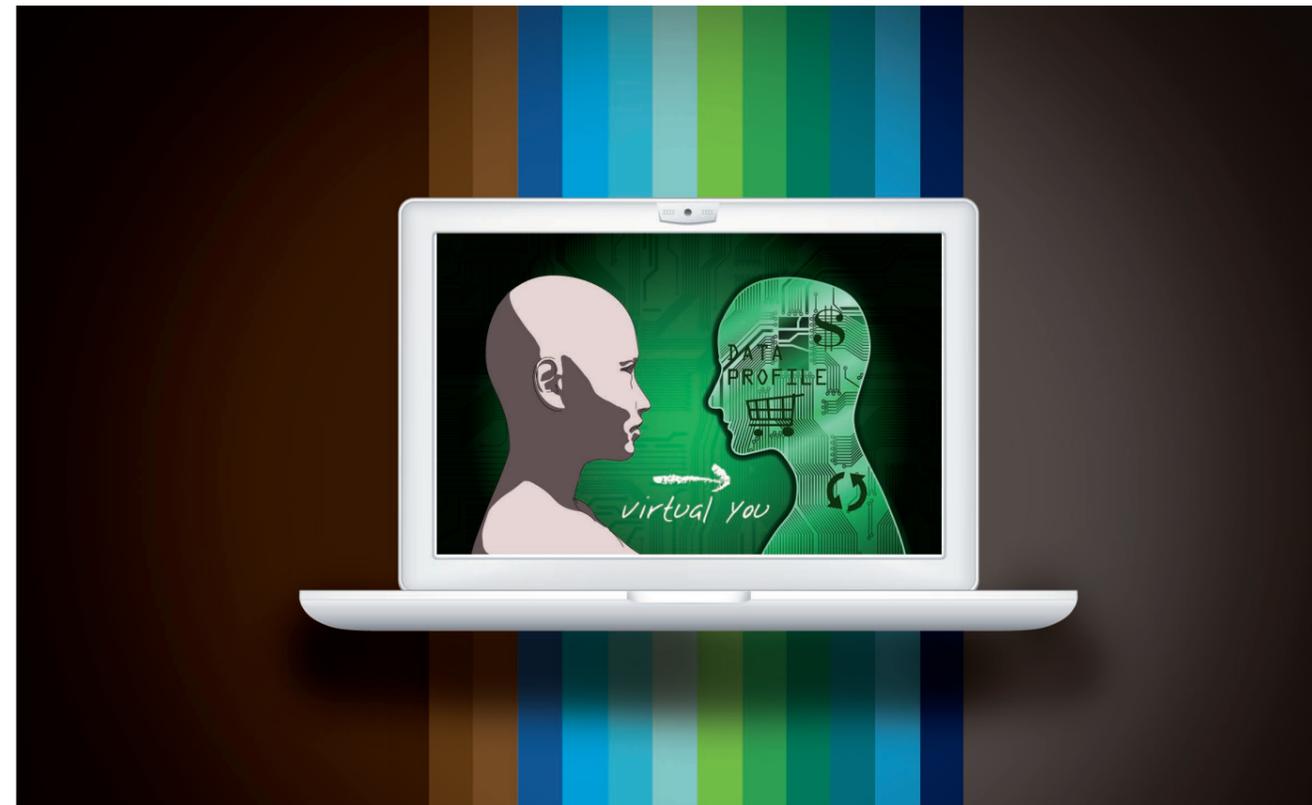


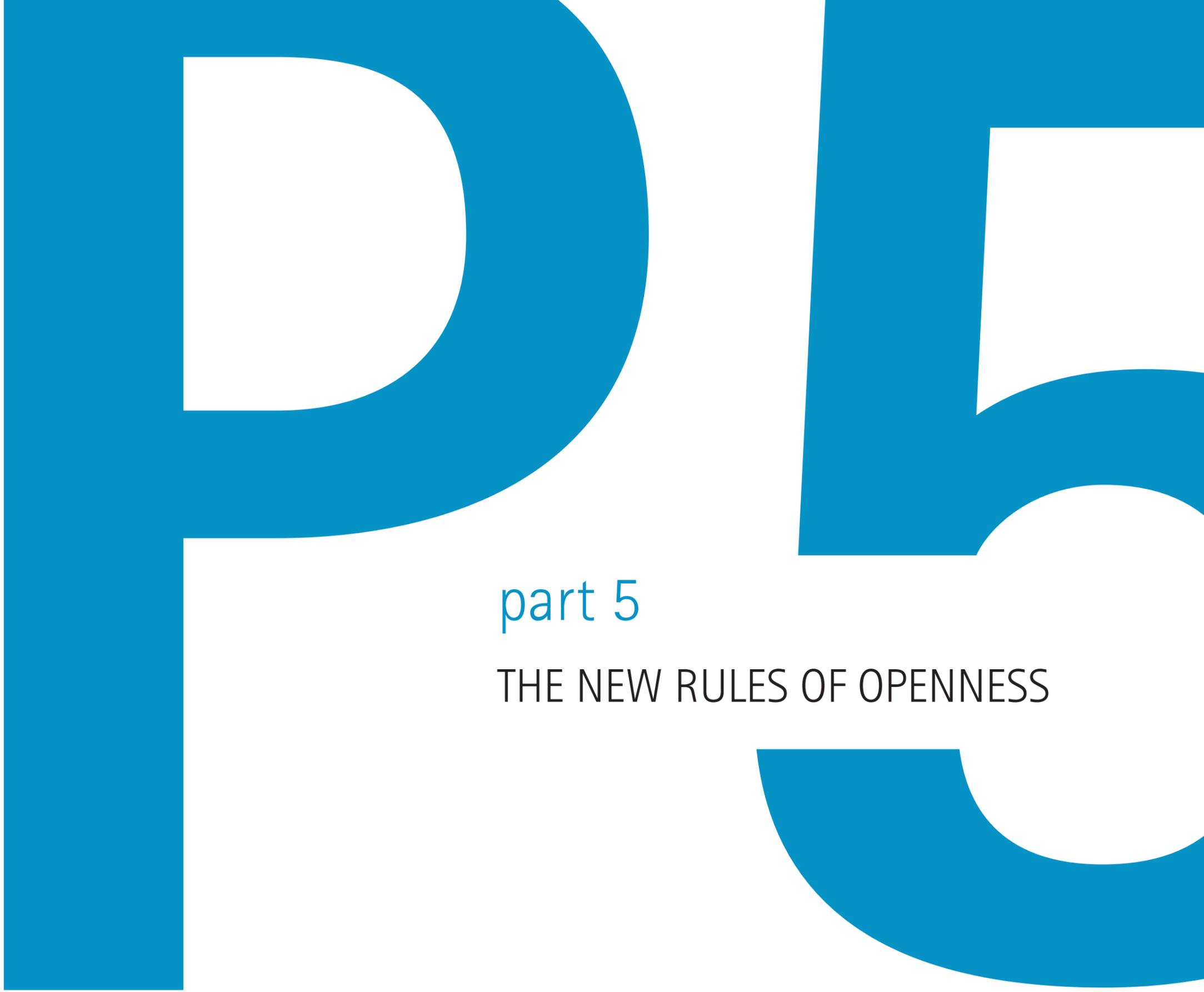
<sup>1</sup> Includes national broadcast TV, local and national spot broadcast TV, and cable network TV equally weighted  
Source: BCG Future of Marketing & Advertising survey

*Ultimately, the battle for data is about advertising and commerce revenues. A few large global players such as Apple, Amazon, Google and Facebook play an increasingly important role in these areas and have a significant impact on the whole industry.*

Ultimately, the battle for data is about advertising and commerce revenues. A few large global players such as Apple, Amazon, Google and

Facebook play an increasingly important role in these areas and have a significant impact on the whole industry. The shift from traditional advertising channels to emerging electronic ones is accelerating, with more than 90% of advertisers planning to allocate more money to these channels in the next years (see exhibit 4.13). Heavy data concentration in the hands of a few companies creates a constellation that could potentially damage markets by narrowing the options for companies advertising or selling their products on the Web.





part 5

THE NEW RULES OF OPENNESS

# THE NEW RULES OF OPENNESS

## THE NEW RULES OF OPENNESS – Implications and strategic priorities

The key assets that companies have long depended on for value generation and growth are changing – and so is the relevance of openness along the value chain. Considerable market power is amassing around new assets, whose openness levels can fundamentally influence the shape and size of the industry, the nature of competition and the breadth of consumer choice. The ability to innovate or create value no longer depends on physical access to a particular infrastructure or a geographical footprint. Non-physical assets, like content licenses or user data, are becoming more essential than ever, which will be reflected in the future growth dynamics of the prevalent business models or sectors in the European digital marketplace. Technology developments, consumer behaviour and shifts in competitive dynamics are forcing the creation of new strategic priorities, not only for companies but also for policy makers and regulators.

### Shifting key assets and industry dynamics

Already key to the converged media and communications industry, access to content will continue to gain importance as distribution paths fragment and viewing devices converge. The strategic position of content rights holders will strengthen as more players than ever before compete for access to content. As the consumer path to content and services shifts to digital, ability to aggregate content and monitor, analyse and influence consumer choices will become more important. Large-scale access to rich data

on behaviour and consumption patterns has become a critical asset for both navigation and monetisation. The owners of large-scale user data – *community platforms and search players* – will derive advantage from both commerce and media becoming increasingly dependent on them to reach consumers. In a converged environment, consumers can access digital data, video and voice services through either device ecosystems or digital platforms spanning fixed-line and mobile environments. The companies best able to provide this entry point are in a strong position to both drive and capture value from multiple parts of the value chain. *Devices and operating systems* that have shown an ability to create and attract appealing content and service value propositions for consumers can become gatekeepers for digital media and services by creating ecosystems around them reinforcing their position in the digital value chain. High-speed broadband transport capacity and ubiquitous online access will be the underlying enabler, but not the key driver, of future growth of the industry. The relative strength of *network operators'* strategic position has weakened as consumption behaviour is being influenced and directly monetised by other Web-based forces that, due to convergence, do not rely directly on any specific transport infrastructure. A strategic counterbalance is, however, generated through increased need for network capacity and quality of service.

The key strategic battlefields of the future will increasingly be found between the global „ecosystems“ that influence value creation on all steps of the value chain – in all areas of TV, data

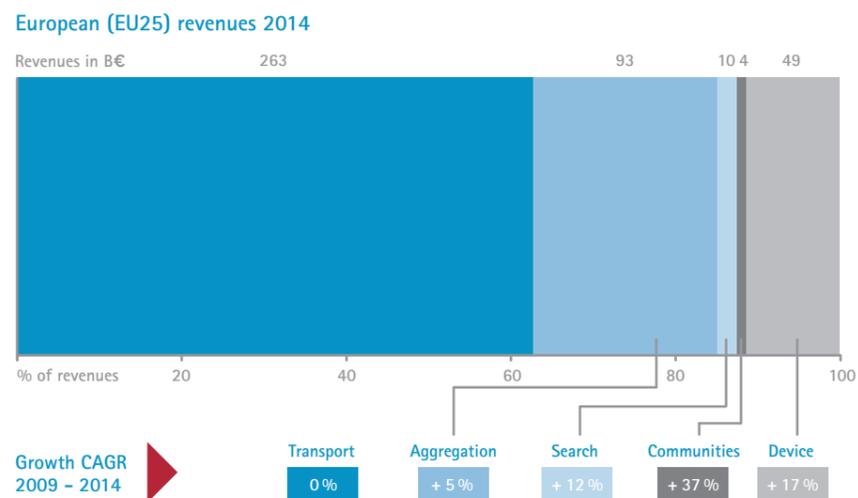


and voice. An accelerated shift is taking place from geographically entrenched service and infrastructure competition to global competitive dynamics. National and regional media and communication companies are competing not only in their own market, but also with global players who are moving aggressively into new spaces and addressing value pools previously out of their reach. In this constellation, access to a global ecosystem becomes increasingly important to companies to participate in future growth. In this ecosystem-based competition, the interaction and overlap between different business models will further increase with the crossing of previously largely separate areas of media and communication. This development could bring significant changes to the industry. Content data, communication and commerce increasingly have the tendency to concentrate around global ecosystems.

*In this ecosystem-based competition, the interaction and overlap between different business models will further increase with the crossing of previously largely separate areas of media and communication.*

This shifting industry balance is also reflected in the expected growth rates of different business models over the next few years (see exhibit 5.1). Community players such as social networking platforms are expected to grow by almost 40% a year as they continue to increase in importance to the digital economy and claim a correspondingly larger share of advertising revenues and direct consumer spend. Search business growth will slow down compared to recent years as competition intensifies for online and mobile advertising. A solid 12% annual growth rate is ex-

Exhibit 5.1  
Size and growth forecast of  
the business model types



Note: Revenues displayed for the archetypes defined for the purpose of this study—does not represent the total value of the ICT, telco, and media revenues in Europe  
Source: Company reports; EITO; OBS; Magna Global; SNL Kagan; Forrester; Ovum; eMarketer; Internet World Stats; Gartner; Juniper; IDC; OANDA; BCG market modeling

pected but could be boosted well beyond that by significant success of search players entering the TV market. Whether the search business model can successfully transfer into the video space will depend on the willingness of other stakeholders such as content producers and content aggregators to partner in the venture. Devices are expected to grow at a solid annual rate of 17%, driven by the continued surge in smartphone ecosystems and Web-enabled TVs. Overall, aggregation revenues will increase by more than 5% annually, driven by the rapid growth of online content revenues, which are expected to grow at over 20% annually. Due to continued decline in voice revenues, transport revenues are expected to remain stable at less than 1% annual growth. Mobile data, fixed-line data and TV access revenues are expected to show single-digit growth rates. Looking at the overall revenue pool of these business models, transport's relative share will actually decrease slightly in the coming years, as other parts of the industry are growing significantly faster.

*Community players such as social networking platforms are expected to grow by almost 40% a year as they continue to increase in importance to the digital economy.*

### Navigating the new openness landscape

Amid the changed relevance of assets and emerging competition dynamics, stakeholders will need to adjust strategic priorities and openness levels in order to successfully navigate the newly emerging openness landscape. Current openness levels result from strategic choices made by companies in relation to external factors such as technology innovation, consumer behaviour and new market entrants that influence the nature of competitive dynamics. Changes in the openness landscape are the cumulative result of the adapted strategies of industry participants in

anticipation of these factors and, in some cases, of regulation. Industry participants – including policy makers and regulators – need to set new strategic priorities based on the strategic battles unfolding around key business assets and the new relative strategic positions of player types. Some priorities have already been put into operation, but many have not. These priorities and future strategic action will define the future openness landscape and impact the value creation and growth of the industry.

*Industry participants – including policy makers and regulators – need to set new strategic priorities based on the strategic battles unfolding around key business assets and the new relative strategic positions of player types.*

### Distribution-centred model

#### Key strategic priorities

Head-on competition with global ecosystems for digital content and services will prove a challenge for even the largest transport providers, whose scale is defined by the geographical reach of their networks, unlike the global Web-based players. Distribution-centred companies have to defend their position along the value chain against multiple entrants into the content aggregation and navigation space.

One of distribution's key strategic objectives will be to secure its content navigation role by providing a superior user interface and cross-platform content and services offering capability. Screen ownership must be secured through rapid deployment of state-of-the-art

platforms and advanced interactive services to the installed customer base and through the creation of a unified user experience. Multichannel operators will tend to shift towards more cooperative business models to attract third-party innovations for their next-generation platforms on a meaningful scale. An increased level of openness with regard to technical conditions will be important to attract developer communities of interactive applications and to connect to highly in-demand social networks and Web platforms. Partnerships with content producers and aggregators for HD, VoD, 3D and OTT content will become increasingly important as distribution-centred players attempt to differentiate themselves through both breadth and depth of their offering. Value generation will rest on the continued ability to leverage direct customer relationships to secure network subscription revenues and to deliver transactional revenues from advanced content services complemented by advertising revenues.

*Screen ownership must be secured through rapid deployment of state-of-the-art platforms and advanced services to the installed customer base.*

Network operators also have to strengthen their strategic position within the digital environment around the fundamental enabler role and protect their core network asset. New strategic advantage may be found in network performance for delivering IP capacity and support for innovative Web-based content and service offerings. One viable positioning for network operators is as go-to-market partner for content and service providers for web and mobile, offering advanced enabling service capabilities such

as CDN<sup>1</sup>, location-based and billing services. This would serve to differentiate networks' value proposition to consumers and business customers against competing infrastructure providers.

#### Key openness shifts

With regard to the traditional *managed* network assets in broadband access, openness dimensions are likely to remain similar, as third parties will have a limited ability to run their own access business models over managed networks beyond what is facilitated by regulation or the openness obligations tied to publicly funded infrastructure. The relevant openness shifts in distribution-centred business models are likely to take place around IP capacity management and the enabling platform or device (e.g., electronic programming guide, set-top boxes).

Increased IP capacity need could result in a tiered service approach where general "best effort" access to content and services will continue to remain open over the public Internet, while premium quality will be subject to differentiated *price conditions*. However, any new strategic leverage based on network performance is not likely to enable operators to put content conditions (e.g., the choice of one content provider over another) on access to their IP capacity due to non-discrimination obligations in the net neutrality context and the competitive discipline of infrastructure competition. The setting of stricter *technical conditions* will also be limited due to the obligation to allow any application, content or service to run properly over the network.

Video content distribution assets related to the enabling platform (e.g., platform content, software/hardware architecture and specifications for IPTV and cable platforms) are likely to make gradual shifts to a higher degree of openness towards third parties in the value chain. Some content distributors will allow access to their platform over third-party devices such as game consoles and connected TV sets as they see strategic interest in relaxing *technology and content conditions* to be accessible to consumers not only through their own device. Proprietary next-generation content platforms will also become more open to third-party content and services (e.g., apps, OTT) through relaxed *economic, content and technology conditions* in order to attract increased scale of digital content.

From a consumer perspective, the shift in IP capacity openness will most likely become visible in premium mobile and broadband connection prices and/or in the pricing schemes of the online content providers. Top-tier packages are likely to be priced at a premium compared to the "all-you-can-eat" or "universal" content prices common in the market today. The openness shifts around content and platform are likely to result in a broader choice and better service offering from the distribution players, and a wider choice of devices for viewing content bundles and greater variety of content and services on the platforms will emerge. The access to the content will continue to be subject to subscription-based relationships towards the end user, so that there will not be a shift towards open in terms of "free."

#### The aggregation-centred model

##### Key strategic priorities

Aggregators will need to leverage brands and establish their own online distribution outlets with direct customer relationships. Development of both free and for-pay online business models will be necessary to counteract the potential revenue loss of masthead linear TV channels as advertisers shift spending towards different types of new digital media. Securing positions on new digital platforms and getting shelf space on hot devices will become strategically important as device proliferation increases and video consumption shifts to multiple digital pathways – mobile and fixed-line. New revenue and pricing models need to be built for new third-party platforms and advanced services such as HD and 3D to secure aggregators' share in consumer and advertising spend.

*Traditional aggregators will be challenged for their advertising revenues by online platforms and search providers.*

The strengthened position of content producers, driven by fragmented distribution and the battle for content rights, will offer traditional aggregators new strategic challenges. Alternative aggregation possibilities could limit their ability to secure exclusive first-run content in their local markets, while mid-range „filler“ content will be decreasingly attractive to an audience with ever greater on-demand access to long-tail content online. Traditional aggregators will also be challenged for their advertising revenues by online platforms and search providers. Sustaining their core revenue streams will depend on their ability to develop new advertising capabilities and the right

metrics around multiple screens, online and time- and place-shifted viewing of their channels.

Online and print publishers need to continue their efforts to create pay services for consumers on emerging device- or OS-based ecosystems. A new balance between open and free online content and paid services needs to be found along with the product offering that consumers are willing to pay for. The primary strategic challenge for publishers will be to understand how to participate successfully in emerging ecosystems and advertising networks as well as coming to grips with emerging consumer media consumption and spending patterns.

##### Key openness shifts

The distribution of content over multiple online and mobile platforms does not necessarily equate to increased openness of the aggregation-centred models' assets towards other participants in the value chain. Although facing many strategic challenges, content aggregators' negotiating position with regard to distribution will strengthen, as will their ability to set *economic and content conditions* for making content assets available to third parties. These access conditions are likely to manifest themselves in additional fees for carriage of innovative formats (e.g., HD, 3D) and potentially in exclusivity deals for certain platforms or devices. New *technical conditions* for content access for distributors or device manufacturers are also likely to emerge – e.g., requirements to limit advanced network functionalities such as time shifts to prevent ad skipping on IPTV and cable platforms in order to protect advertising revenues. These conditions will partially reflect the level of the content aggregators' own ambitions to establish proprieta-

<sup>1</sup> Content delivery network

ry content platforms and build direct customer relations to monetise their content innovations.

From a consumer perspective, regardless of the conditions set between different value chain participants, content access will increasingly become ubiquitous and in many cases more open. The majority of content will be equally available over managed platforms, online distribution outlets, tablets and mobile phones. Long-tail content will become increasingly open and accessible through search and online platforms, delivering a greater selection at a higher convenience to consumers. The quality and price conditions, however, will be differentiated depending on the distribution channel. Access to HD and 3D content will most likely be subject to direct user fees. Exclusive blockbuster content

will mostly continue to be for-pay – and often limited to a single outlet.

### The search-centred model

#### Key strategic priorities

Search companies need to continue to secure greater multichannel service relevance by intensifying diversification into mobile, video and a variety of auxiliary products. Due to their strong foothold in the desktop and mobile Internet, large search players are well positioned to increase their importance in the area of converged media. Their digital content navigation capabilities and advertising network will equip them to enter the video space and address an advertising market currently more than double the size of the total online advertising market.

*Ambitions to become the primary gateway to long-tail and even blockbuster content will not, however, be easily fulfilled. Search players will increasingly be challenged by rights holders protecting their content and business models.*

Ambitions to become the primary gateway to long-tail and even blockbuster content will not, however, be easily fulfilled. Search players will increasingly be challenged by rights holders protecting their content and business models. Search providers must therefore develop new partnership and revenue-sharing models that will provide greater access to online and linear content, as well as enabling devices. They should also be prepared to defend their core search business in the data ecosystem and their position as the gateway to the Web. The challenge here comes from more networking platforms whose large-scale access to consumer data gives a potential edge in search, commerce and more accurate targeting of display ads.

#### Key openness shifts

The actual openness levels of leading search companies' assets and the various conditions set for access to them is not undisputed and is currently the subject of a formal antitrust investigation by the European Commission. Although many aspects of the search-centred business models are actually relatively open (e.g., third-party access to search services, OS and applications) the very assets under scrutiny (e.g., underlying search algorithms, customer data and online advertising networks) are likely to take a shift towards more openness due to industry and regulatory pressure. Search players are likely to relax the *economic*

*and content conditions* around their key assets by increasing transparency on search results, portability of data and price and contractual arrangements concerning advertising.

Search players will continue to provide a high level of openness from a consumer perspective regarding the very assets that drive traffic to their different platforms. An increasingly large selection of innovative services will be offered to consumers free of charge (e.g., e-mail, communities, messaging, traffic navigation, maps, television services, IP telephony). However, from a consumer perspective, the openness levels of the search-centred models can be impaired through reduced interoperability with other services (e.g., social communities) and any commercial practices thought to impair search neutrality or transparency regarding search results. This applies to both global search engines like Google and Bing and so-called „search verticals“ that specialise in specific segments of commerce or services.

### The community-centred model

#### Key strategic priorities

When it comes to community platforms, size matters. To profit from network effects, operators need to build sufficient scale and quickly gain influence. As the recent rise and fall of social communities such as MySpace shows, success in this area can be short-lived. To firmly anchor the business, a platform strategy must create sustainable win-win cooperation models with media and commerce, driving traffic and revenue streams in both directions. Communities will aim to extend their ability to monetise their data with search, content navigation, advertising, communication and commerce.



*Their key asset – the rich user and usage data – must be managed carefully and responsibly. It will become even more valuable for developing superior ad targeting, search and commerce capabilities.*

Their key asset – the rich user and usage data – must be managed carefully and responsibly. It will become even more valuable for developing superior ad targeting, search and commerce capabilities in the future. A carefully controlled degree of openness and transparency is therefore needed around the use of data and advertising platforms to balance the interests of platform users and the community's attractiveness for media, search and commerce partnerships. To support rapid innovation in applications and games for the community platform, the openness levels and economic conditions for developers need to be sufficient to attract enough scale, as the variety of content, apps and games helps sustain the platform's self-reinforcing network effects.

#### Key openness shifts

The leading community platforms will continue to protect the economic value of their business models by setting very selective conditions of access to their assets. On the one hand, the *content and technology conditions* of access for third parties in terms of linking up to the platforms, providing content or integrating it into own business models will continue to be relatively low in most instances. The openness levels of data and *economic conditions* set for access to advertising platforms, however, are not likely to be relaxed, as demand for it is increasing. With larger user numbers and increased usage, the value and importance of the community platforms

increases for advertisers. With increased market power in community advertising, their business and openness practices are likely to be scrutinised more intensely by industry and regulation, as has been the case with leading search providers. This will provide a counterbalance to the extent of the access conditions applied.

From a consumer perspective, similar to search services, the community platforms are in many regards open and are likely to remain so. There are no major conditions set for access to them and the service is free of charge. The closed elements from a user perspective regard the irremovability and lack of portability and transparency of their uploaded data. This element will at least to some extent become more open and transparent as leading social networks have recently started to allow users to retrieve their uploaded data. Information on how the data is monetised, however, remains relatively opaque and the interoperability of the community platforms and direct portability continues to be subject to individual providers' strategic decisions.

#### The device-centred model

##### Key strategic priorities

Leading device manufacturers have in recent years been extremely successful in building strong ecosystems around mobile and smart devices as well as game consoles. With media converging, device manufacturers will strive to provide navigation and horizontal service capabilities across multiple device types – including mobile phones, tablets and TV sets. Current device ecosystem players will leverage their capabilities to extend their reach into the living room and television manufacturers will create their own device-

based ecosystems. While no television manufacturer has yet been able to replicate the success of mobile device ecosystems, this may change with the rapid penetration of Web-enabled TV sets and the increasing scale and market share of leading brands.

*Current ecosystem players will leverage their capabilities to extend their reach into the living room and large television manufacturers will attempt to create their own device based ecosystems.*

Device-centred companies will aim to drive device sales by increasing their efforts to secure access to popular content and services as well as by expanding their ecosystems from a sales-based system into advertising networks. A handful of large-scale ecosystems are likely

to continue to govern. Most manufacturers will adapt to this reality with strategies emphasising multi-functionality and interoperability in order to accommodate the leading global platforms and applications.

#### Key openness shifts

The device-centred model will continue to build on the same principles as before – i.e., provide an integrated look and feel and ensure the seamless functionality of all aspects of the user experience. This implies the maintenance of relatively *high technology and content conditions* towards third parties. These conditions are, however, likely to be gradually relaxed around leading platforms as competition intensifies in the device space. Exclusivity agreements between certain device companies and network operators are also fading out in Europe, increasing the openness of





appendix



## Openness definition

The openness definition contains three critical elements: assets, asset holders and third parties (see Exhibit A1):

- **Assets** include any means of generating value. These assets can include content production and distribution rights, fixed-line and mobile networks, devices and their operating systems, platforms and applications running on them and technical standards, software code and user data, just to name the most prominent

- **An asset holder** controls the access to an asset by being in a position to impose conditions on access to or use of that asset. A wide variety of market players, including content producers, content aggregators, network operators, device manufacturers and technology and software companies, can hold assets

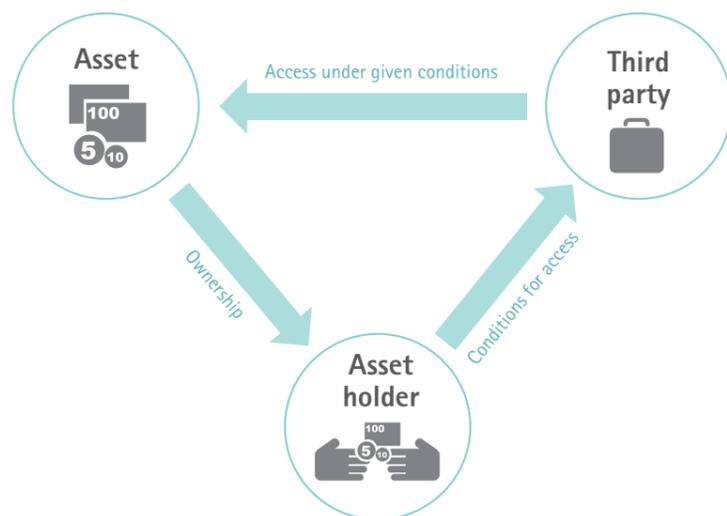
- **Third parties** include any market player other than the asset holder that wants to gain access to or use an asset for its own (business) purposes. Third parties can include both rivals and potential partners from other parts of the industry value chain.

Amazon's price cap of \$9.99 on digital books and Apple's \$0.99 pricing of digital music. Incumbent telecommunications operators, for example, must offer alternative operators access to their telecommunication networks at regulated rates that affect the price ranges available for these third parties' own product offerings.

to its asset but controls the type of product, service and content a third party can offer via the asset either through direct selection or through closely defined terms of use and censorship. An example for this is YouTube, which reserves the right to censor the content of the videos it accepts (partly because it is legally obligated to do so). Conditions that directly influence the way a third party's product offering has to be designed to make use of the asset in question also fall into this category.

- **Product and service conditions.** The access to an asset is limited for certain products, services or content. The asset holder offers access

Exhibit A1  
The three elements of the openness definition



The conditions on access to an asset can be seen as a combination of three basic dimensions (see Exhibit A2):

- **Economic conditions.** Access to an asset is limited through economic mechanisms such as

variable or fixed pricing for access, or other contractual terms. These conditions influence the third party's ability to leverage the asset. This often affects how the third party can price access for its customers, and, ultimately, the third party's profits. An example for price conditions is



Exhibit A2  
Openness levels of assets

- **Technology conditions.** The access to an asset is limited through controlled system standards. The asset holder allows the third party use of its asset, but only within the asset holder's proprietary or controlled system. Both Apple and Google, for example, open their mobile operating system platform to varying degrees, allowing third parties to monetise their applications on the platform. Developers must, however, adhere to certain system standards, including the programming languages used – an example is Apple's (initial) refusal to allow developers to use Adobe Flash.

Each of the three dimensions can again take on different levels of conditions. To assess the level of a certain type of condition, two criteria best serve the purpose of uniformly evaluating their effect on the openness of an asset for third-party access in the sense of the given definition. Firstly, the extent to which the conditions limit the degree of freedom of a third party with regard to its business model incorporating the asset must be taken into account. This can reach from full freedom or only minor influence on business model design to a situation where business models have to be specifically tailored to these con-

ditions or are prevented from becoming feasible altogether. Exhibit A3 shows an exemplary categorisation of different levels of conditions based on these two criteria.

Exhibit A3  
Assessing the level of conditions on access to an asset

Level of conditions	Assessment per potential type of condition
<b>Very low</b>	Access to asset is granted mostly in absence of any particular (business) conditions <i>Example: Access to free P2P networks, content on Wikipedia, access to search services, and access to IP transport (for content and service providers)</i>
<b>Low</b>	Conditions of access have a relatively limited impact on the degree of freedom for third parties' business models and present only a negligible entry barrier for smaller market players <i>Example: Use of Android operating system for developers, access to development platforms/tools</i>
<b>Medium</b>	Conditions on access have quite an impact on third parties' business models so that they have to be tailored to meet these conditions. <i>Example: Development and price conditions set on utilisation of the Apple iTunes store, conditions for distribution of content over cable/IPTV managed networks</i>
<b>High</b>	Conditions on access prevent a significant number of third parties from incorporating the asset in their business models. <i>Example: Access to certain exclusive content, access to proprietary sales channels, search algorithm functionality and, in some cases, user data</i>
<b>Prohibitive</b>	Conditions on access typically prevent use or utilisation of the asset by third parties without purchasing either the asset or the asset holder <i>Example: Hypothetical conditions set on incorporation of iTunes by other device manufacturers, access to low-level computing infrastructure of search or device players, access to customer data</i>

Liberty Global commissioned The Boston Consulting Group to author a study on the topic of openness in the context of the European media & telecommunications industry. The objective of this work is to contribute to a debate currently high on the agenda of industry, policy and regulation with a fresh perspective and a framework for discussion. The study reflects BCG's thoughts on the topic of openness supported by industry analysis as well as case studies and company examples based on publicly available information. In the process of writing the study over 20 European industry managers, policy makers and regulators were interviewed whose expert contribution is reflected in this work. The study provides a basis for discussion for key stakeholders in the media & telecommunications industry on a broad set of topics related to openness developments and future strategic, policy and regulatory priorities.

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