VIEW

ON

TELECOMMUNICATIONS, MEDIA AND INTERNET:

THE NEXT STEPS

Ministry of Economic Affairs

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CONTENTS

PART 1 Trend analysis: Telecom and the Internet economy

This section draws on developments in the market to argue that the Internet is the driving force behind developments in the telecommunications market and that a view on the that market cannot be written without placing telecom in the broader context of the Internet. Whereas years ago the telecom market could be described in terms of a single copper cable and telephone service, today it is an environment in which networks (mobile, fixed), devices (smartphone, tablet, TV, PC) and a multitude of Internet-based and other communication services are amalgamated into a single economic system, presented here as the Internet value web. This web is the breeding ground for the Internet economy. Audiovisual services ('media') play a major role here and are therefore also included in this trend analysis.

- *Trend analysis: the Internet is driving developments in telecommunications and the audiovisual sector*
- *The boundaries between telecom, media and Internet are blurring: emergence of the Internet value web*
- *The Internet value web as a breeding ground for the Internet economy*

The Internet is a network of digital transmission networks, accessible and interlinked via a single Internet Protocol (IP). That sounds complicated, but in reality the Internet is nothing more than an ingenious digital network built across the telecom networks (the wires and cables in the ground). In common parlance, the term 'Internet' is generally also taken to include all the players and services found on the Internet. People talk about the 'Internet economy' in order to identify all the economic value creation surrounding the Internet, including telecom and e-commerce. The Internet has become an indispensable vehicle for social and economic activity in the last decade. From the retail sector to the travel industry, from sole traders to students, everyone feels the impact of the Internet. That includes the telecommunications sector.

As well as driving data use across telecommunications networks, the Internet is also the driver behind the convergence taking place in the market, making it possible for what were previously separate markets or links in the value chain to increase their market or expand their service provision to other links in the value chain. Convergence will be mentioned several times in this trend analysis, but a first form of convergence is visible in the networks. Thanks to the Internet, networks are increasingly developing into a generic infrastructure which can be used to offer any number and variety of services and to which a wide range of devices can be connected. To put it into specific terms: since the mid-1990s, cable networks have offered telephony and Internet services alongside television (via a 'triple play package'). The traditional copper telecom network has also offered television services alongside telephony and Internet since 2006.
The role and importance of hardware (especially 'screens' such as smartphones, tablets and Connected TV) cannot be ignored here. Before the introduction of the smartphone, telecom providers controlled the services that were available on devices; the rise of the smartphone and mobile Internet means they have largely lost this control. In the past, the number of services

supported by the hardware was constrained by the support provided by the network. However, the smartphone provides access to the Internet, which means the number of services that consumers can access via the mobile network has grown explosively. The adoption of these services and the concomitant rapid growth in data consumption has put enormous pressure on the mobile networks. The only way for telecom operators to manage this is by investing in the infrastructure. For today's consumer, the service provided by telecom providers is no longer decisive, but merely serves to facilitate the unprecedented capabilities of his or her screen, and not impede them. The device is the central component; the network merely instrumental. A comparable development is taking place in the broadcasting distribution market due to the rise of Connected TV, which offers a user-friendly way of accessing audiovisual content on the Internet. This could potentially have a significant influence on the revenues of telecom providers from the provision of audiovisual services, while at the same time they will be expected to continue investing in the infrastructure so that consumers are able to make use of the possibilities offered by Connected TV.

Business models on the networks are changing…

A new market is emerging in which the consumer is offered telephony, messaging and other 'digital communication services' by several different providers over the Internet. For the traditional telecom players, this creates new opportunities (more demand for bandwidth), but also more competition (at the level of services). The arrival of these new (Internet) players is leading to a change in the business models in the telecom sector. This has been visible in recent years in the changing tariff structure for mobile telecom bundles. Whereas initially calls and text messaging accounted for the lion's share of subscription costs, the biggest component is now the data bundle. This enables telecom providers to maintain revenue levels so that they can continue to invest in their networks (faster 3G, rollout of 4G, more mobile antennae) for their customers whilst at the same time keeping shareholders happy.

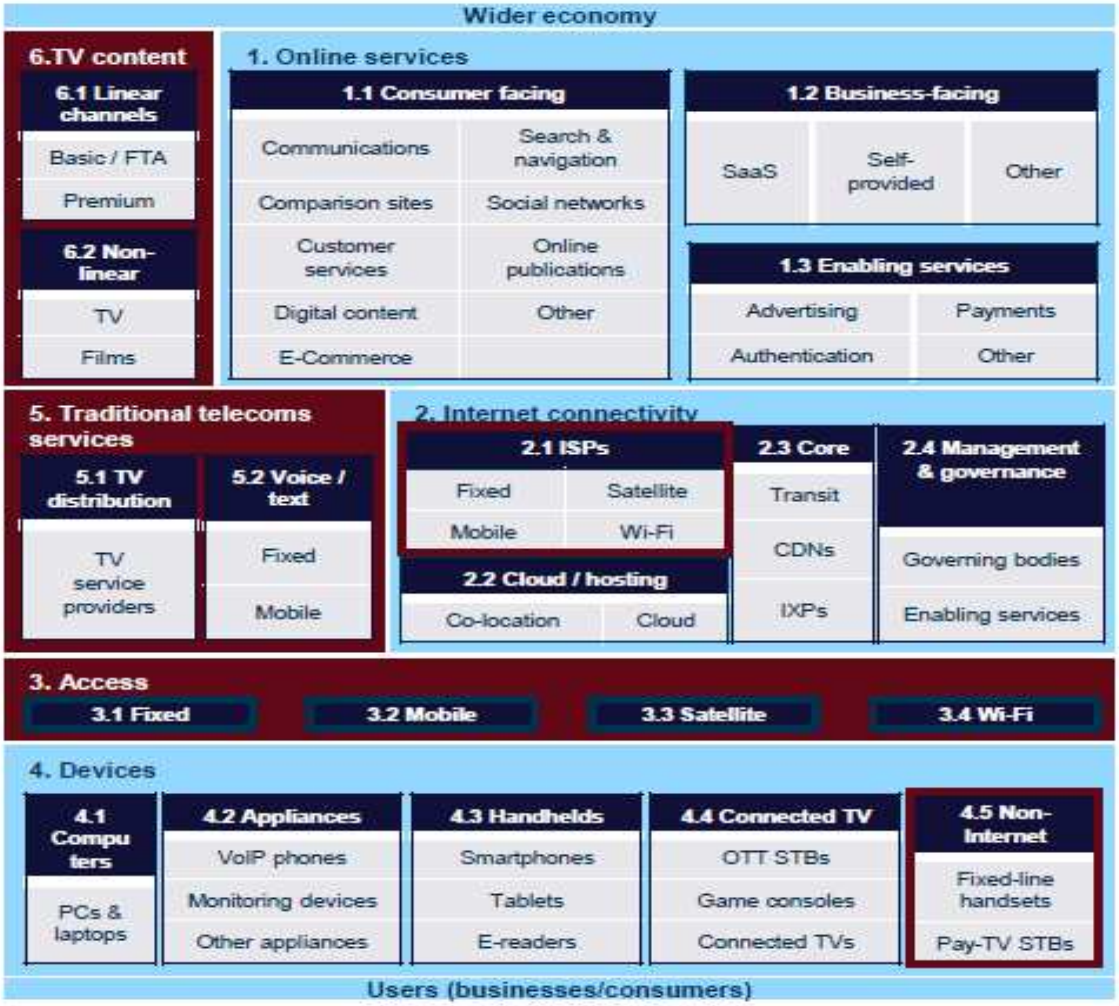
For the moment, the main conclusion is that the telecommunications market cannot be seen in isolation from the developments in the Internet domain. A vision of the telecom market is thus not complete unless it also includes developments in relation to the Internet. The telecom market is an indispensable link in the functioning of the Internet, but the Internet in turn exerts a transformative influence on the telecom sector.

The boundaries between telecom, media and Internet are blurring: emergence of the Internet value web

If the Internet is so important for the telecommunications sector and even the audiovisual world, how do the three relate to each other? The following diagram illustrates this in a simple, technology-neutral way. In reality, there are four components which are dependent on each other and which act as links in the production chain:

1. Online services (websites)
2. Internet connectivity (all technical resources that keep the Internet running)
3. Infrastructure (mobile, fixed or satellite)
4. Hardware (e.g. PC, TV or smartphone).

The traditional telecom services (telephony, SMS) and television services are increasingly competing with and being replaced by their counterparts on the Internet.



The Internet value web. Source: AnalysysMason (2013)

The different parties in this schematic each have their own background; they come from different domains which are now becoming interdependent; they are markets in their own right. Many shifts can be observed between these formerly separate worlds (convergence) as players attempt to expand into more and more different terrains. It is important not to see this playing field as a linear production chain, but as a web; providers are no longer dependent on one route for the provision of a digital product or service. For example, an online store can host its own website, or can outsource it to a hosting provider or cloud provider. There are also numerous options for processing payments, such as invoices, credit card payment, or electrtonic banking. Finally, the store can opt to operate only via a website, or through an app as well, and can then make a further choice as to the platform on which it wishes to have a presence.

The above diagram outlines what we call the Internet value web, and aims to place the telecom market in the proper context, to show that the playing field has enlarged and how this presents both opportunities and challenges. It is intended purely to help identify the different relationships,

and is not intended to give the impression of a playing field that is cast in stone. It is a schematic illustration of a field in which the telecom market is dependent on developments in and on the Internet – and vice versa, because without the physical infrastructure there is no Internet.

It is also important to note that the different panels in the diagram are markets in their own right. They have developed from different backgrounds, not least thanks to the intervention (or lack thereof) by the government. The telecommunications market was state-owned for more than a century, was later privatised and liberalised but is still subject to ex-ante supervision by a market regulator. Successive governments felt it was necessary to set rules in advance to ensure that the market functioned properly, because (parts of) the networks were difficult to replicate. At the same time, the Internet panels in the diagram (Online services and Internet connectivity) developed without any government intervention. Since its first appearance the Internet as a system has grown entirely in the private domain. Things such as the issuing of domain names or routing are part of an ingenious system of private players that additionally, unlike most telecom providers, move freely across national borders. The panel entitled 'Devices', finally, is a goods market in the real world, which is influenced by government trade policy measures such as customs tariffs, safety standards and technical standards.

The Internet value web as a breeding ground for the Internet economy

The Internet value web as a whole acts as a lever for renewal in the Dutch economy, and has generated a multiplicity of economic activity and a whole gamut of new businesses. There are great opportunities for innovation and economic growth in the digital economy. The source of these opportunities is the Internet value web, in which the telecom infrastructure plays a central role. After all, no network means no Internet. Following on from that letter, we will look in detail at how the government can contribute to strengthening what is in reality the breeding ground for the Internet economy.

To conclude, a brief outline of the distant future. The big question is how – and how quickly – the Internet value web will develop in the coming years. A distillation of discussions with experts in the field is given below:

- Promising developments are anticipated in the field of audiovisual services, which as time passes will be tailored more and more to the individual viewer and presented on different screens. Watching television will enter a new phase.
- It is generally expected that digital products will be increasingly tailored to the individual. There will be increasing scope for the user to tailor digital content to his or her own needs. This personalised offering of digital audiovisual and other services will however entail the use of people's personal details. While the development of Big Data offers major economic opportunities, therefore, it also raises questions about the protection of privacy and personal details, and how providers use them.
- The growing digital offering is expected to make the role of 'gatekeepers' or 'platform functions' more important. These include intermediaries who select information for a user and help them choose from the available offerings. The selection of this information may be based on commercial motives. Given the enormous array of products, services and content available, it becomes a major challenge for the user to find the information they looking for

'impartially', while the challenge for providers is to be readily visible and findable for the user and to secure a prominent place on the selection menu of relevant intermediaries. There will also be intermediaries who possess an item of software or hardware on which third parties can build: a platform. Those third parties are then largely dependent on the intermediary for the functioning of their own software or hardware, giving the intermediary a certain position of power. Examples of these kinds of intermediary and their platforms are search engines, social networks, operating systems, app stores, hardware manufacturers and electronic programme guides.

- Digitisation will penetrate further and more deeply into the economy. The Internet of Things has already been mentioned, but the possibilities of the Internet for many economic sectors are far from exhausted. Sectors of civil society such as education and the care sector are also rapidly embracing the digital revolution (it is no coincidence that e-education and e-health are part of the ICT breakthrough projects).
- Finally, experts point out that trust is perhaps the most important condition for the continued development and even the continued existence of the Internet. Users must be able to rely on security and continuity. Reference can also be made in this regard to the influence of geopolitics on the Internet. It is already the case that the influence of less democratic states is leading to the emergence of more and more national 'Internets', which are putting pressure on the openness of the Internet.

PART 2 Developing the market under the Internet economy and the role of the government

The telecom, media and Internet value web functions as a breeding ground for the further development of the Internet economy and hence for economic growth. It is important that these markets function well. Competitiveness, freedom and reliability are essential pillars supporting the proper functioning of the telecom market. These objectives are just as important in the broader market. There are challenges for the future in the wider context of the Internet value web, starting from these objectives. The government faces a challenge in making the regulations more sector-neutral, because the present distinction between traditional telecom and/or media players and other (Internet) players will become unsustainable in the future. The government intends to address this challenge by: 1. seeking to create a level playing field for the market, preferably with lighter-touch regulation; 2. doing this as far as possible in collaboration with regional partners; and 3. acting as a network partner.

New policy questions in the Internet economy

The in the recent past by the Dutch government formulated Digital Agenda stood – and still stands – for 'superfast networks and services', an 'open and free Internet' and 'digital trust'. The Dutch government still considers these objectives important, as they are based on a number of assumptions that the government takes into account when defining its role in the digital (telecom) market. These assumptions come down to the following:

- Competitiveness: a healthy market is characterised by a dynamic of continual investment and innovation. Such a market contributes to economic growth. The government can and does contribute to this by placing incentives for competition in the market.
- Freedom: it is important that users are able to choose, free of improper influence from governments, businesses or other interest groups, in the Netherlands or elsewhere. This is important in order to protect civil freedoms, but also for the sake of the (free) market.
- Reliability: integrity (accuracy of information, no security infringements), continuity (no failures or breakdowns) and protection of privacy are necessary now and in the future to ensure confidence and trust in this market. Without justified trust, the development of the market will be impeded.

The Dutch government still regards competitiveness, freedom and reliability as conditions for the proper functioning of the market. Unless these conditions are assured, economic growth will stagnate. This sometimes makes it necessary to strike a balance and even to make choices between these objectives. The intention in this document is to weigh these conditions in the existing policy against the broader context of the Internet value web, to set them against developments in the medium to long term and so to arrive at a policy agenda for the future. Naturally, actions are already being taken on the path to that future, but this document firsts set

out a vision and direction for government policy in relation to telecommunications, media and the Internet.

(Re)weighing the principles of competitiveness, freedom and reliability against the broader context of the Internet value web is not new. As the Internet has developed further, so the public debate has also grown in recent years to encompass the full breadth of the Internet economy; for example, the law on neutrality now guarantees an open and free Internet. In addition, the debate surrounding the legislation on cookies was and is essentially about reliability, not just of the networks, but also of online services. The 'must-carry' obligation laid down in the Dutch Media Act relates to all package providers, regardless of the technology they use (broadcast or Internet) to offer their programmes. In this way, the 'Internet' is already incorporated in policy and regulation on an ad hoc basis.

It is now time for a more considered, broader and more structural approach to new issues arising in the Internet value web. Those new issues are consistently linked to one and the same dilemma: how can the government unite the 'old' and 'new' worlds? Time and again, this comes down to the fact that obligations have traditionally rested on certain players (telecom, broadcasters), while other types of players have to date had to carry these obligations only on an ad hoc basis. The biggest policy challenge for the future will therefore be to intervene in a sector-neutral way where government intervention is needed, whilst endeavouring to select the best intervention point for any measures to be taken, and considering their impact on the Internet value web as a whole and all its players. As the distinction between Internet, telecom and media players becomes ever more difficult to define, a reappraisal of the government's role, scope and methods is needed. This is also important in order to maintain a level playing field for the various players in the market. And that is no simple task: as discussed already, the Internet value web comprises several domains, each of which has arisen from its own background. These market segments each have a different history with the government. For example, the core components of the Internet have branched out independently and spread across national jurisdictions. Not only that, many are convinced that the success of the Internet lies precisely in the absence of government interference. This is in contrast to the 'networks' component, which traces its origins to a state monopoly and which continues to be heavily regulated even after privatisation and liberalisation. What it will come down to is combining the best of both worlds. It is important here constantly to return to the question of what the goal of regulation is, and to ask critically whether and how achievement of this goal can best be assured in the new, converging environment.

The desire to create a modern regulatory framework is operationalised using a number of issues drawn from practice and on the basis of discussions with various market players. The following five questions constitute the policy agenda for the medium term and will supplement the 2011 Digital Agenda of The Netherlands:

1. Market players: Internet players are competing directly with traditional telecommunications and television services; business models are changing. Does the regulatory framework for the telecom sector take sufficient account of the convergence in the market?

2. Neutrality deeper in the Internet value web: freedom also includes 'neutrality'. Net-neutrality is now anchored in law, but neutrality issues are increasingly rearing their heads as we progress in the Internet value web. Does this mean that the law should be extended further, or actually that it should not?
3. Convergence of audiovisual services: the arrival of the Internet and Connected TV is blurring the distinction between linear ('traditional' TV) and non-linear (on demand via the Internet) viewing for the user. This begs the question of whether the regulation of linear viewing needs to be reformed or whether non-linear programming should be incorporated in the existing frameworks.
4. New players and extension of the due diligence obligation in relation to integrity, continuity and privacy: should the existing due diligence obligation (as laid down in the Dutch Telecommunications Act) be extended to include 'new' parties such as hosting providers, Internet exchanges, cloud providers or hardware and software suppliers?
5. Due diligence obligation for the future: in addition to the question of who should be covered by the formal due diligence obligation, the definition of what that due diligence obligation entails for companies is also likely to lead to new discussions. The expectation is that the trend towards more personalised programming (through the use of Big Data or otherwise) will sharpen the debate about e-privacy in the medium term.

Guideline

While it is true that, reasoning from the basis of the conditions for economic growth (competitiveness, freedom and reliability), a number of new policy issues were raised, these remain meaningless if it is not clear *how* they should be addressed and *which* choices need to be made. The government believes that the rules need to be modernised and that the main question is *when* and *how* this should be done. The government wishes to establish a guideline for the transition to modernisation, partly in order to increase the predictability of government policy. That predictability is important for the investment climate in the Netherlands: businesses report that they take legal certainty and predictability into account in their decisions as to whether or not to invest in the Netherlands. There are three principles here:

1. Aiming for a level playing field, with an explicit preference for lighter-touch regulation

It is important that comparable services and players are treated equally by the law. The key is to do this after a reappraisal of the usefulness of and need for the present regulations in a converging market. In the first place, the market is in many cases still in such a state of flux that imposing regulations too soon could stifle budding innovation. This applies among other things for the audiovisual (media) world, where the development towards on-demand or Connected TV (more personalised television programming where and when the viewer wishes, with an increased number of channels through which that content can be viewed) is still in full swing. In the second place, the convergence of the market offers a good opportunity to consider whether some legislation may have become superfluous in the new (technological) context, or needs to be adapted in some other way. The preference is for fewer rules where possible. A disadvantage of rolling out regulation to other parties is that it throws up entrance barriers to the telecom/Internet market; that is not good

for innovation and competition in the market and will do nothing to make the Netherlands a more attractive place for businesses to establish.

2. International collaboration where possible

Given the fact that the Internet economy is intrinsically an international market, with international players that are sometimes located outside the Dutch jurisdiction, assuring competitiveness, freedom and reliability will involve looking more rather than less towards Europe. This preferred route is also important in achieving a level playing field in this converging market. The government therefore intends to focus more on strengthened international cooperation and less on developing Dutch rules to achieve certain objectives. This does not however mean that the Netherlands will automatically accept every proposal: the government line on subsidiarity and proportionality remains intact. The government line on 'low-regulation implementation, unless' also remains in force. This means that implementation of regulation based on international agreements is only supplemented with national rules of the national circumstances demand this. This principle is of particular importance for the investment climate: Dutch businesses benefit from being treated as equally as possible to their competitors in other countries.

3. As a network partner

The Internet has changed the world, and particularly the world of electronic communications: markets, services and devices are growing apace and becoming interwoven. This highly complex market is throwing up ever more new questions in relation to existing public interests, which increasingly demand a different method of working from in the past. Increasingly, issues cannot be solved by tightening up existing (national) legislation, but prove to be a 'network problem': in order to achieve a societal effect, effective cooperation both *in* the market and *between* marketplayers, users and government is essential, both within and outside the Netherlands. There are already examples aplenty of this in this market; for example, the major providers have made agreements on regional roaming in the event of a major breakdown; botnets are combated via Abuse HUB; and of course the international market itself is 'operated' as a network. The playing field is wider than the telecom sector and wider than the Dutch media players. This calls for a more generic and therefore less 'market regulator'-focused approach. Making policy in this way also fits in better with the decentralised nature of the Internet and the appropriate decision-making process in which decisions are taken bottom-up. The way forward is to seek solutions together, with emphatic scope and opportunity being given to allow both market and citizen to take their own initiatives and responsibilities. My primary focus is on network governance. Participating in a network of national and international players and entering into public-private partnerships is essential for achieving Internet security, e-privacy and efficient markets. The starting point is therefore the dialogue and cooperation between government and market/society. In addition, the government will act to set frameworks and standards where necessary. The law lays down the principles and main lines and serves as a sanction where needed. Precisely what network governance involves is illustrated in Box 1 (multi-stakeholder model). This is a very far-reaching model of network governance, in which the government cooperates in the midst of a multitude of parties on the (technical) governance of the Internet. The intention of setting up a roundtable fits in with this approach, in a

bid to establish a continual dialogue between government, market and society and to move the Internet economy to the next level together.

Box 1 Multi-stakeholder model drives the Internet

Openness is an essential characteristic of the Internet and one of the leading principles underpinning its architecture. The way in which the Internet has arisen is unique, namely as the product of collaborative efforts by research institutes, businesses, civil society and standardisation institutes, which work together on an equal footing to find solutions: the **multi-stakeholder process**. This has led to effective forms of self-organisation and self-regulation, and this model has enabled the Internet to grow into a single global, shared and accessible infrastructure which is also a breeding ground for the international Internet economy.

The Internet is for everyone and belongs to everyone, but the freedom and openness that we now enjoy is not automatic. Internationally, there are countries which favour strong government control and which demand far-reaching powers to control the Internet. Along with the majority of Western countries, the Netherlands fights for the multi-stakeholder model: it prevents excessive government intervention or regulation, but also avoids domination by particular parties or sectors, so that further innovation and growth of the Internet is not impeded. The Netherlands continues to defend this model in numerous international organisations, such as the ITU (International Telecommunications Union, the Internet Governance Forum (IGF), the forthcoming WSIS 2015 (World Summit on Information Society) and ICANN (Internet Corporation for Assigned Names and Numbering). A free and open Internet is of course the starting point for the Freedom Online Coalition, which the Netherlands founded in 2011 together with the US. Finally, the Dutch government believes that Internet freedom should also be a central theme at the Cyberspace Conference which the Netherlands will host in 2015.

The update to the policy agenda must therefore take account not only of the functioning of the Internet value web, but also of the changing relationship between market, government, semi-public institutions, civil-society organisations and of course users. Precisely what the above guidelines for government action will mean in practice is discussed in Part 3.

PART 3 Competitiveness, freedom and reliability in the Internet economy

In this section competitiveness, freedom and reliability are weighed against the fall spectrum of the Internet value web: telecom, media and Internet are therefore regarded as forming part of the same economic system. This produces five new policy issues which are discussed on the basis of the guideline from Part 2.

The section on competitiveness will look at:

I. Maintaining the dynamic of investments and innovation in an European internal digital (telecom) market

The section on freedom will look at:

II. Neutrality deeper in the Internet value web

III. Convergence of audiovisual services

The section on reliability will look at:

IV. New players and extension of the due diligence obligation in relation to integrity, continuity and privacy

V. Defining due diligence obligation and the implications of 'profiling'

Competitiveness: A healthy market is characterised by a dynamic of continual investment and innovation. The government contributes to this by introducing incentives for competition where necessary. It is also the rationale behind the European competition policy.

I. The telecom market

Market developments: the Netherlands is in a good starting position, but that is no reason to give it a rest. International developments make more international cooperation essential.

Telecommunications policy is aimed at stimulating competition between and on networks in order to foster innovation and growth in this market. This is the most important objective underlying the regulatory frameworks which, since the first directives in the 1990s, have virtually left the national telecommunications markets to their own devices. The aim was to create an open telecom market, by breaking up the state monopolie and introduce market forces by imposing ex ante obligations on the former state monopolist.

The trend analysis (Part 1) described how the Internet has led to quantitative changes in the investment climate and the earnings models for telecom providers. Here, the more qualitative characteristics are added to this picture.

Infrastructure.

- The Netherlands stands out very favourably among other markets by having more than one (2-3) fixed telecom networks in addition to two specific television networks (satellite and digital terrestrial) and 3-4 larger mobile network providers.

- On top of that, the broadband market in the Netherlands is especially dynamic compared to its neighbours: Internet coverage, both fixed and mobile is virtually 100% in the Netherlands.
- The reason for this dynamic in the Netherlands can be traced in part to the convergence in the networks: technological developments within the networks and the emergence of the Internet as a universal distribution platform means it is now possible to offer more different services over networks, causing the traditional dividing lines between networks to disappear. The traditional copper telecom network now offers Internet and television services alongside telephony. Similarly, cable networks now offer telephony and Internet alongside television.

Business models on networks are changing.

- A commercial shift is taking place on the networks. As indicated in the trend analysis, the emergence of over-the-top (OTT) services is confronting telecom providers with new challenges. This will be particularly noticeable if audiovisual services prove to be a great commercial success and if the Internet of Things also gets properly underway.
- One constant in this narrative is that the commercial and competitive relations for services on the networks are changing rapidly and that the key is increasingly effective access to (local loop) networks, both for competing (with network owners) providers of digital communication services and for specialist services. Telecom providers will thus have to rethink their earnings models – and are doing so. One option is to project themselves more as a platform offering bundled services. The market for triple play bundles (telephony, Internet and television) and quadruple play (telephony, Internet and television plus mobile) is gaining ground. Users increasingly want to be able to communicate and have access to services anywhere and at any time. The expectation is that the traditional telecom services as well as television will increasingly be taken over by providers of Internet services. The networks of the telecom providers remain crucial because they are the access portals to the Internet and the specialist services.

International position of the Netherlands

- As stated in the Digital Agenda, the Netherlands is in an excellent starting position, but that is no reason to lean back.
- In any event, it is certain that the differing interpretation of regulations leads to different conditions for access to the telecom market. More harmonisation in market regulation and the issuing of spectrum could make it easier for telecom providers to operate in an international market. It is very important to ensure net-neutrality, because that protects the rights of the citizen to an open and free Internet and fosters innovation on and via the Internet.
- At the same time, there are a number of caveats. There is a danger of market regulation being used to achieve short-term ends and becoming at odds with the independence of regulators . Political independence is essential in ensuring that market regulation is based on expertise and being able to offer market parties adequate legal certainty.
- Following the international route; the Netherlands will have to demonstrate discipline in all areas and develop national legislation only in exceptional cases. That may seem logical, but it has consequences. As there is, that in due course this will apply for consumer protection, an area where the Netherlands has to date supplemented the European regulations on various

points. The Netherlands endorses the drive for harmonisation of consumer rights at international level.

Dutch long-term vision on the completion of the (telecom) market

The foregoing outlines the Dutch input for the dissussions on the measures currently on the table, but this brief is intended as a view on the future. It can therefore focus on more aspects, such as how to deal with regulations given that the boundaries between telecom, media and Internet are blurring. An important piece of regulation is the ex ante market regulation of the telecom networks. This is the first piece of regulation that the Netherlands would like to evaluate for its usefulness, need and effectiveness set against the broader context of the Internet value web.

Evaluation of the ex ante market regulation

The ex ante regulation of the telecom market is intended to foster competition on and between infrastructures. It does this by imposing access obligations in advance on those with 'significant market power'. The starting point is that, given the high costs of installing infrastructure, competition will not get off the ground without prior intervention. The often said idea is that this regulation be temporary in nature: one day the competition will have become so fierce that access regulation is no longer necessary, and if there are two installed networks that situation has virtually been achieved. The Netherlands is on the record as being unconvinced by this standpoint that 'two is enough', and therefore argues for the maintaining of the access regulation, including in a market where there are two competing networks. A market with two players can in some cases work well for a short time, but sustained and robust competition requires more than two players. Competition is moreover becoming increasingly important because the networks are increasingly becoming the access portals to the Internet economy (see trend analysis and market analysis earlier in this document). Without robust competition at network level, innovation both within the networks (including convergence of fixed and mobile) and on the networks (new services) will be impeded. Effective competition, if necessary supported by access regulation, is thus relevant for the development of the Internet value web as a whole. The Netherlands therefore believes that an evaluation of the present ex ante market regulation should look very specifically at the importance of access to (local loop) networks.

Attention should also be devoted in this regard to configuring access to high-grade telecom services for non-telecom providers such as the media, care or education sectors. It is not always easy in practice to build bridges between these two (and more) worlds, which means that intelligent applications sometimes fail to get off the ground. Non-telecom parties – particularly those that are further removed from the technology, such as the education or care sectors – are still not entirely clear about exactly what they want to achieve on the network and precisely what demands the telecom provider needs to meet. Moreover, they often operate in a very fragmented way, making it difficult for telecom providers to construct a good, commercially viable offer. Regardless of developments, the Ministry of Economic Affairs wishes in any event to attempt to improve communication between these parties, and will set up a number of dialogues for this purpose, initially between the energy sector and the telecom sector.

It is also important that these frameworks are as free from regulation as possible. Although the present regulatory framework provides for customisation, it also leads to highly detailed micro-regulation and to lengthy legal procedures. As a result, market players have too little regulatory certainty. This leads to uncertainty in the market, which in turn impacts on the investments in networks, which are often earned back only over the long term. Moreover, the implementation costs are high, both for the regulator and for the market. The Netherlands therefore believes that the evaluation should devote specific attention to simplification, regulatory certainty and offering scope for small players and challengers. This should be accompanied by an investigation of whether elements from the system that was used in the earlier regulations (1998-2002) could offer benefits. Under what was known as Open Network Provision, access obligations automatically applied once a party achieved a certain market share. The Netherlands advocates a study to explore whether the present market could benefit from a return to the application of automatic standardised access obligations for parties with a substantial share of the connections to electronic communication networks. These access obligations would be intended to enable alternative providers to combine their own network with access to local loop networks and thus enable them to place their own independent offering in the market. This could also provide incentives for continued investment in Next Generation networks. These standardised access obligations could then for example apply for those components of the networks that are not replicable (local loops).

Freedom: The aim is to create an Internet economy that is free of improper influence from governments, businesses or other interest groups. This is important in order to protect civil freedoms, but also for the sake of the (free) market.

II. Neutrality deeper in the Internet value web

The Netherlands has played a pioneering role in the field of net neutrality. It was the first country in Europe to establish net neutrality in law in support of a free and open Internet, and continues to staunchly support an open and free Internet. In the view of the Netherlands, the Internet remains an open space in which users are free to consult or consume the information and services of their choice, whilst at the same time making it easy for businesses to reach a wider public in a simple manner.

The expectation is that comparable neutrality issues – which in essence are about (non-) discrimination and access – will become more common in the future with regard to 'gatekeepers' – for example, intermediaries that select information for users and help them choose from the available offerings. They include search engines, social networks and electronic programme guides, but also manufacturers of televisions and smartphones. These gatekeepers are in a position to determine which information the user is able find reasonably or very easily, and which are more difficult or impossible to find. The commercial interests of these gatekeepers often play a role in the selection and presentation of information. Given the continuing growth in the supply of information and content, filtering it provides a useful function for users. At the same time, this

filtering and selection process means that some information or content does not reach the user, and this can influence the plurality, diversity and (possibly) impartiality of the information to which users can gain access. In addition, it is essential for businesses that they can be readily found in a world where the volume of information, and therefore the choices open to users, is only increasing. The Dutch government believes it is important to make clear to users that information is filtered and that they have the ability to turn that filter off, or even to influence it. In addition to gatekeepers who filter this information, there are also gatekeepers who possess hardware or software on which third parties can build or on which those third parties are dependent for the development or delivery of their service. Examples are operating systems, software platforms or digital passes. In reality, these are software and hardware commodities or semi-manufactures, the essential building blocks for the development of digital products and services for third parties.

The dependence of third parties on these 'assets' and the way in which gatekeepers decide which information they display, means gatekeepers are in a certain position of power. It is important to prevent abuse of this power or to combat it through general competition law.. The Dutch government is willing to make an active contribution to this, and with this in mind, a study will be carried out in 2014 to determine what the essential digital commodities are for today and coming years. The results will then be shared with other countries. As in the area of net neutrality, the aim of the Dutch government here is to play a pioneering role and identify potential problems at an early stage so that they can be addressed. A key principle is that users must have freedom of choice concerning the information they are able to consult. At the same time, innovation must not be unnecessarily impeded by imposing rules before the commercial landscape has had an opportunity to crystallise. The general competition law offers a suitable framework for this.

III. Convergence of audiovisual services: regulatory distinction between linear and non-linear TV viewing is starting to become untenable

As discussed in the trend analysis, on-demand and deferred video and TV viewing is on the rise. Increasingly intelligent hardware and the new possibilities it offers (e.g. timeshifting or a Connected TV which puts together a personalised 'TV evening' for the consumer) are blurring the distinction between linear and non-linear viewing.

Providers are responding to this by revamping and enlarging the service offering, by forging strategic alliances with each other and with content providers and/or by developing new platforms to bring their content to the end-user. As stated earlier, the value chain is becoming ever more complex and consequently difficult to oversee. At the same time, the access thresholds have been lowered enormously; it is easier than ever before to reach consumers directly. However (quickly) the market develops, the ways in which content reaches the consumer – cable, copper networks, ether, satellite, linear or non-linear – will no longer be important in the future, because consumers do not perceive any difference between them. Consumers also see no difference between linear, direct viewing a sports contest and watching that same contest in its entirety at a later time through on-demand viewing. This does not alter the fact that the nature of the programme (a live

sports broadcast versus highlights) can carry a different advertising regime, for example (with the distinction between linear and non-linear no longer being relevant). Given the importance of a level playing field, it is important for providers that the rules are the same for all of them, regardless of the distribution method chosen. It is also important for other companies which do business on the Internet and which are commercial consumers of services that the situation (rapidly) becomes clear in this regard; positions are already being taken, and large, global players are emphatically making themselves heard.

The present rules as set out in the Audiovisual Media Services Directive are based on the technological distinction between linear and non-linear viewing, with fewer rules applying for non-linear viewing in areas such as advertising or protection of minors. There are historical reasons for this distinction, for example the fact that the 'linear' viewer (or listener) has less control over the available programmes and programming. The non-linear world has developed recently within the autonomous Internet and outside the linear frameworks. Users have more influence over what, when and how they consume content. Non-linear media use is increasing enormously, especially among the young, while the boundary between linear and non-linear viewing is becoming increasingly blurred. For example, viewers can pause linear television broadcasts and resume watching later, or fast-forward through commercials.

As per the guideline described earlier, the government is grasping the opportunity to review whether the present rules on linear services are still necessary and useful, and whether there are ways of reducing the number of those rules. The Netherlands sees convergence as an opportunity to give careful consideration to a coherent regulatory framework and to reduce the regulation of linear services. The position of content providers will also be considered as part of this exercise, including those that are funded from the public purse. On the one hand, the aim is to ensure that programmes continue to be accessible and easy to find, and on the other to prevent distortion of competition with commercial providers. The Dutch government will review the need and scope for introducing more cohesion in the relevant regulatory framework.

A development which is taking place in a number of countries is 'cord cutting': the increased media content offered over the Internet is leading to a growing trend among consumers to take out an 'Internet-only' subscription and cancel their relatively expensive – compared with the Netherlands – television subscriptions. By contrast, the trend in the Netherlands is increasingly towards 'all-in-one' packages, for example because they are easier or cheaper. As long as consumers are free to make this choice, there is no problem. The increase in and consumption of many new OTT services (free or otherwise) could however lead to a decline in the importance of and consumer demand for an extensive TV package in the Netherlands, too. Some (broadcasting) network providers do not yet offer their customers the ability to take out an 'Internet-only' subscription, and in reality force their customers to take out both an Internet and TV subscription. This form of mandatory linkage limits users' freedom of choice. The government wishes to work in partnership with the market to explore whether this linkage could be eliminated, taking into account the technological impediments which may play a role in the background.

Reliability: integrity (accuracy of information, no security infringements), continuity (no breakdowns or dropout) and protection of privacy are necessary now and in the future to ensure confidence in this market. Without justified confidence, there will be no growth.

IV. New players and extension of the due diligence obligation in relation to integrity, continuity and privacy

The rapid rise of the Internet and its scalability have thrown the thinking about integrity, continuity and privacy into sharp relief and increased the understanding of them. Consumers today have very high expectations of the Internet: Everything (net neutrality) must be available on all devices (tablet, computer, mobile telephone), everywhere (including in rural areas) and at all times (without disruptions) and must be protected (integrity and guaranteed privacy). Dependence on the Internet is already so great that the consequences if things go wrong are considerable; for example a fire in one key mobile telecom switch caused the payments system (debit cards) in a part of the country to shut down. Although the number of major network disruptions has been limited in recent years, alertness is called for. The dependence on networks will only increase in the future, and intensive use of smartphones and tablets will greatly increase the pressure in the airwaves. Even critical business processes are sometimes based on wireless Internet connections, with the assumption that they will always work. The telecommunications infrastructure is one of the vital infrastructures on the list of vital sectors. Vital infrastructure has been defined as a collection of 'products, services and the underlying processes which, if they break down, can give rise to social disruption. This may be because of a large number of victims and extensive economic damage, or where repair will take a very long time and there are no real alternatives available, whereas those products and services are essential'. It is important that telecommunications infrastructure in a broad sense, and therefore also the Internet, is recognised as being of crucial importance. The difficulty is that the dependence on products, services and underlying processes constantly has to be redefined because the market is developing continually. This discussion recurs regularly when regulations are renewed; this is discussed further below.

The integrity of networks and services will also become increasingly important in the coming years. Networks and services make intensive use of all manner of components and devices, without it always being clear whether the levels of security are up to date. This can lead among other things to abuse of data, large-scale distribution of malware or the creation of botnets, and dents the confidence of buyers and end users. Both the market and the government will have to meet the expectations of these buyers and end users as well as possible. However, those buyers and users will also have to take steps themselves. This demands increased awareness and a perspective for action. Muxch has been invested in recent years in awareness-raising programmes aimed at various target groups: students, children, elderly people, SME's. While these campaigns have led to a considerable shift lack in recent years from 'unaware' to 'aware', a further transition will now

have to be made from 'aware' to 'competent'. The Dutch government will therefore continue its efforts to raise the awareness of service buyers and end users (particularly individual users, SMEs and the self-employed) regarding safe Internet use by informing them about how to use the Internet safely and do business online securely, and offering them the practical tools they need to put awareness this into practice. In terms of awareness-raising and provision of information, the governmental awareness raising programme supports both the National Cyber Security Strategy and the view on e-privacy.

The importance of investing in reliability is clear. Reliability contributes to justified trust in the Internet and online services, and is one of the conditions for innovation and growth in the Internet economy. A recent study on the economic aspects of cybersecurity makes clear that there are market imperfections in relation to reliability (information asymmetry regarding software, 'first-mover disadvantage') which legitimise government action. The government's role in this regard is discussed further below.

Legislation and network governance focused on network reliability

Digital communication network and service providers are and will continue to be very important in offering that reliability. It is for this reason that the Dutch Telecommunications Act includes a due diligence obligation. This is a broad obligation imposed on providers that fall within the scope of the Act to ensure integrity, continuity and privacy. The Act makes providers accountable for their responsibilities and stipulates that they must take appropriate technical and organisational measures to safeguard integrity, continuity and protection of privacy. Given the speed of technological developments and the diversity of measures, the Act does not describe those measures in further detail; in the first instance, that is left to the market.

This does not mean that the government regards reliability as unimportant. On the contrary, the policy on reliability is clearly determined by the outcomes of public-private partnership, in which the initiative has sometimes been taken by the government and sometimes by the market. The primary aim is to find incentives which will enable the envisaged reliability to be achieved in tandem with the prevailing business models. The principal way of approaching this is through network governance and facilitating market initiatives, and where necessary through legislation and regulation. As an example, in the wake of the fire in a mobile telecommunication switch referred to earlier, mobile providers made agreements on the deployment of regional roaming services if a calamity with comparable impact should re-occur. In the first instance, these agreements cover voice telephony and SMS. Research currently being carried out and scheduled for completion early next year will hopefully show to what extent such collective solutions are also needed to deal with the rise of M2M communication, or whether there are alternatives in the form of individual networks or use of WiFi networks with national coverage. One caveat is that purchasers and users will also have to take their own measures. Given the dependencies, consideration will also have to be given to whether other service providers also need to be accountable for their due diligence obligation as regards continuity, partly in the light of the proposed Directive on Network and Information Security (see below).

An example in the area of integrity is Abuse HUB. The Abuse Information Exchange (Abuse HUB) was set up in August 2012 with financial help from the Ministry of Economic Affairs and under the banner Internet Safety Platform. The aim of Abuse HUB is to centralise data in order to improve the supply of information to its members concerning botnets and other forms of Internet abuse in the Netherlands. Those members are service providers who provide basic facilities for the Internet, such as ISPs, TLD operators and hosting providers. It is important to bring in other parties, such as mobile operators, while a comprehensive approach to botnets also requires collaboration from investigative agencies. The DDoS attacks on Dutch banks in the summer of 2013 have also led to a strengthening of the cooperation with banks and the National Cyber Security Centre (NCSC). The collaboration and active participation within and beyond the chain will be developed further over the coming months via the Internet Safety Platform. Whether Abuse HUB has actually contributed to a 'clean Internet' will become apparent from a measurement to be carried out in 2014.

Rolling out network governance reliability further in the chain: Internet standards

As argued earlier, the discussion of reliability does not end with the networks. Reliability is important for the entire Internet value chain, including the reliability of the Internet itself (interpreted here as the reliability of the Internet infrastructure). The reliability of the Internet is largely determined by the architecture and the protocols used for handling Internet traffic. There are numerous protocols and standards that can be applied both to enable the quantity of data traffic to be managed and to ensure its integrity. Standards are developed internationally based on a multi-stakeholder approach. The adoption rate is generally low but growing steadily. There are currently too few incentives to apply standards, and there is too little scope to enforce their application. Problems such as 'first-mover disadvantage' or information asymmetry are often the root cause of this. The advantages of standards are not always recognised due to ignorance. The Netherlands has always been a strong advocate of Internet standards at international level, such as IPV6 and DNSSEC, and numerous initiatives have been rolled out to achieve wider application, such as *Taskforce on IPv6*. However, the time is ripe to look at and apply the relevant standards in combination rather than in isolation. The Ministry of Economic Affairs will work in partnership with the Dutch Standardisation Board to set up a public-private platform with the brief of increasing the application of standards such as IPV6, DNSSEC and DKIM. The main question is how these parties can work together to ensure that the Dutch Internet remains up-to-date in terms of standards and does not fall behind. Joint action creates greater urgency and contributes to wider dissemination of knowledge. Participants in the Platform include key stakeholders from the Dutch Internet environment (SURFnet, SIDN, RIPE, ISOC, NLnet labs) and the government. Given the positive external effects of the wide use of standards, the possibility of making application of standards more enforceable is also being explored.

Expanding scope of legislation further in the chain: due diligence obligation

Network governance is the model used for addressing a wide range of reliability issues effectively. Legislation plays a role in the background, as a legal blessing when arrangements are working well in the market or as a sanction when they are not. As stated earlier, the Telecommunications Act governs the accountability of market players as regards integrity, continuity and privacy. That is a good thing, because it makes those concerned publicly aware of their responsibility and means

they can be held accountable for it. It is important that obligations only affect market players that fall within the scope of the Telecommunications Act and others covered by the definition of 'providers of public digital communication'. Here again, therefore, there is an imbalance between traditional and 'new' players. The security breach at a certificate authority, for example, made clear the dependence on service delivery (including from central government and vital sectors) of the use of certificates. It prompted the development of a notification duty for security breaches as well as moves to regulate digitally signed certificates. The question now on the table is to what extent there is a task the government in regulating these certificates. However, this discussion is of course much wider: should Internet players such as web hosting providers, Internet hubs (see also Box 2), e-commerce platforms, Internet payment systems, social networks, search engines, cloud services or other gatekeepers which the market may produce also be covered by these measures? Here again, the Dutch government advocates an international approach. A common high level of network and information security requires a level playing field. The new Directive on Network and Information Security not only extends the duty of notification and resilience from the telecom directives to include vital sectors that are connected to the Internet, such as the energy sector, banks, etc, but also to include a number of the key Internet services from the value chain referred to earlier.

To what extent these parties will actually have to be challenged on their responsibility depends on their role in the value chain.. The question is for which roles in the value chain legislation is needed, and of course what is then proportionate. For the moment, this is a problem that is discussed. Over the coming months, the Netherlands will initially discuss this potential extension with the market players themselves. The outcomes will be incorporated in the negotiations on the Directive.

Box 2 AMS-IX

The Amsterdam Internet Exchange (AMS-IX) is the biggest Internet hub in Europe and the second largest in the world. Many national and international providers are connected to the AMS- IX, handling large volumes of data traffic. AMS-IX thus plays a key role in the continuity of Internet traffic. The risk of dropout is not great, and its impact would seem to be limited at the moment – though this is determined by the number and size of the backup connections of the users of AMS-IX and by the scope for handling the traffic via other IXs elsewhere in the world. Given the increased interconnectedness at international level, this latter aspect will be examined more closely in early 2014.

As part of this exercise, the question of how the regulations can be made simpler and (administratively) lighter for operators can also be addressed. There are for example many notification duties which impinge on continuity, integrity and data leakage, and notification duties have been announced and are in preparation in relation to security breaches. Where possible, streamlining of the notification duties has already taken place. The integrity of the measures announced will also be critically reviewed, as will the scope for concentration to create a single point of contact in order to minimise the amount of red tape for the industry.

V. A due diligence obligation for the future

Apart from the question of who is covered by the due diligence obligation, technological and market developments will lead to discussion about what should be part of the due diligence obligation of providers, especially with regard to privacy. 'Paying' for free services by providing

personal details is already a familiar phenomenon, but developments in the market - see also the trend analysis - are moving towards even more personalised content ('profiling') based on even more analysis of even more personal data (Big Data). This is an area that is developing rapidly, and the economic growth potential of the sector is considerable.

The government view on e-privacy – to some extent the precursor of this (broader) view - made clear that a balance needs to be struck between the importance of proper protection of personal details (condition: reliability) and the innovative capacity of the Internet economy (condition: competitiveness). As already stated in the previous section, a lack of digital trust on the part of end users will harm economic opportunities. The preconditions for raising this digital trust to a higher level are giving end-users control over their personal details, transparency regarding how those details are processed and responsibility on the part of providers. These conditions are even more relevant as the amount of data increases (Big Data). A first reflection is given below, which will be followed in the spring of 2014 by further considerations in relation to the phenomenon of profiling.

Big Data can be described as the entire body of available information (in various forms, both structured and unstructured) which can be analysed within a specific context and which leads to new applications and services. It explicitly contains not only personal details, but a multitude of different types of information (from meteorological data to sensor measurements in oil refineries). The rise of ICT and the Internet means that the quantity of available data is only increasing:

- It is predicted that, by 2020, there will be 30 billion devices with Internet connection;
- The amount of medical information available doubles every five years;
- The National Library of the Netherlands is are working together wih private sector to scan 160,000 books and put them online.

ICT thus ensures that Big Data is available, accessible and able to be shared, analysed, enriched and applied. Intelligent data analysis is therefore becoming essential in ensuring that (work) processes run more effectively and more efficiently. A number of large companies and banks are already actively exploring Big Data. Analysing data thus creates major opportunities, both commercial and social, because analysis of such diverse types of information on such a large scale was impossible in the past. Moreover, as people make more and more use of the Internet, the amount of available data is increasing there, too, and with it the opportunities to link data collected in different contexts. If Big Data is placed within the context of the Internet (and its ever-growing use by consumers), this can raise privacy-related questions, which in turn can put pressure on digital trust and confidence.

Major attention is currently being given to the amount of information that companies collect about Internet users for things such as marketing purposes. There appears to be an imbalance between the control that the Internet user can exert over the release of his or her personal details and the degree to which businesses can process and commercialise those details. Processing data left online using complex algorithms can determine which news reports or search results are considered interesting for a given Internet user, which status updates are displayed or which content is the most suitable – all without the Internet user being aware that a preselection has been made. Some techniques are making it ever easier for companies to separate individuals into

categories, without this 'online individual' having to be linked to a natural person. This categorisation is sometimes described as 'profiling'. Internet users should be able to exert more control over their online profiles if they so wish. A topic such as e-privacy is difficult to control using the traditional levers of government action through legislation; it is important first to engage in dialogue with the relevant market players (network governance). Consequently, the ICT Big Data breakthrough project, which is focused on exploiting the economic and social opportunities of Big Data, will also need to devote attention to any privacy issues.

The law is of course still relevant, including in the dialogue with the industry. Whenever personal details are processed, the Personal Data Protection Act applies. Here again, the accountability of those concerned needs to be defined. For example, a key principle in the law is that personal details must not be processed for a purpose that is irreconcilable with the purpose for which they were collected, and more data may not be collected than is strictly necessary for the ultimate purpose. The Dutch Data Protection Authority established a series of 'guidelines ' in early 2013 showing how the Authority applies the security standards set out in the Act, Section 13 of which sets out a due diligence obligation which requires that companies and public authorities that process personal details must take 'appropriate technological and organisational measures' to secure those personal details. Steps must be taken to ensure that personal details and personal data entered by users on websites and online forms cannot be misused by being transmitted via the Internet unencrypted and unsecured. The Telecommunications Act is also important in this context. It contains a number of provisions concerning the confidential nature of communication, such as the use of traffic and location data and the destruction of those data. The provision on cookies also sets the conditions for storing and reading data from a peripheral device. The principle is that the user decides whether his or her data can be used, and if so, for what purpose. This means that personal data can only be used with the permission of the user, who must have been properly informed in advance.

Finally, it is important to continue the dialogue on online privacy across national borders, including at regional and global level. For example, efforts are under way to improve the position of the end user in the drafting of the forthcoming Regulation on data protection. It is particularly relevant in relation to Big Data and privacy that the Regulation seeks to regulate the use and processing of personal data and the consent of end users in this regard. A more meaningful duty to provide information will also be needed, requiring companies to inform end users in a clear, easily accessible and understandable way about the processing of personal details. The Regulation also aims for a degree of data minimisation by stipulating that only the data needed for the stated purpose may be collected. The negotiations on this Regulation are still taking place. The Dutch government advocates a strong Regulation, which is technology-neutral and which will provide a robust framework for the longer term.