

# Answer to the European Commission public consultation on the early challenges regarding the "Internet of Things"

**Please indicate your preference (use a X):**

I agree that this document is made public

I want this document **not to** be made public

**If you reply on your own behalf, please indicate:**

- Name:
- Telephone:
- Email:
- Country of residence:

**If you are replying on behalf of an organisation, please indicate:**

- The organisation's name: [Telefonica, S.A.](#)
- The type of organisation:
  - private company
  - government/public body/international organisation
  - academic/research institution
  - non governmental organisation
  - other:
- Your organisation details
  - o location: [Headquarter: Gran Vía, 28 – 28013 Madrid](#)
  - o size: [revenues 2007: EUR 56,441 million](#)
  - o scope of activities (max 3 sentences): [Telecommunications](#)
  - o website: [www.telefonica.com](http://www.telefonica.com)
- Contact person: [Alfredo Acebal Neu](#)
- Contact person' telephone: [+32 2 230 95 55](#)
- Contact person's email: [alfredo.acebal@telefonica.es](mailto:alfredo.acebal@telefonica.es)

*Telefonica*

---

**Answer to the European Commission public  
consultation on the early challenges regarding the  
"Internet of Things"**

November 2008

## GENERAL COMMENTS

Telefónica welcomes the opportunity to comment on the issues related to the “early challenges regarding the Internet of Things” and would like to thank the European Commission for initiating this wide debate among the various public and private stakeholders interested in its development. Telefónica understands that further experience with regard to this concept and its implications should be the subject of continuous dialogue between them.

From Telefónica’s point of view, as an electronic communications service and network provider, the general concept of the “Internet of Things “ opens an innovative activity field of new services/applications that will certainly favour the creation of new business and communications opportunities, through the increasing networking of different devices that are able to exchange information between them.

Within this context, Telefónica recognises the early status of the development of this concept. At present, it is certainly an open scenario with service/applications modalities to be determined and developed over the coming years, in a continuous evolution that can not be foreseen presently in detail. In any case, Telefónica considers that acknowledged concerns on the functionalities supporting these services should be progressively envisaged prior to commercial launching in order to avoid any problems that may restrict commercial developments.

Technologies such as RFID, that allow the provision of services based on information related to user identity and status/location of objects, involve some possible conflicting issues on privacy and data protection or about the scope of the infrastructure needed to carry the foreseeable amount of traffic generated by these new services. Some policy principles should be applied to try to solve any issues that arise, considering that, in general, existing regulation, which might need to be adapted in some cases, is enough to deal with the vast majority of them at this stage of development. This gradual experience should serve as the basis to gather additional knowledge regarding the implications and policy challenges of the broader concept of the “Internet of Things”.

On the other hand, regarding the new Broadband Performance Index that compares competition, coverage, speed and quality of Internet access across Europe that has been made public together with consultation, Telefonica would like to comment that it would be advisable to also include, in a comprehensive way, the wireless broadband technologies that could provide comparable services. It seems, for example, that WI-FI broadband access has not been properly considered in the Czech Republic leading to an underestimation of the Broadband penetration in that country. It would also be useful if the EC made public a more detailed description of the methodology used to elaborate the BPI so that all interested parties could better understand the results.

## SPECIFIC COMMENTS

### Fostering Innovation

- **New network investments**

“Internet of Things”, and applications such as RFID and M2M in particular, will create very large traffic volumes as their operation is mainly based on the exchange of different types of information from a huge number of objects. This fact, which is recognised in the consultation document, will signify the need for adding new network resources within current access as well as backhaul/backbone architectures in the electronic communication networks. For this to occur, public policy should ensure the establishment of a framework that promotes investment and innovation, whereas market forces should take the lead.

It is also necessary to take into consideration that even though the name most used is “Internet of Things”, the Internet will not be the only network used to interconnect the “things” because some applications will need specific requirements (security, QoS, etc.). So attention should not be only focused on the Internet but on the development of networks to properly handle the requirements of communications between “things”.

- **Network management and quality of service**

Future services associated with the Internet of Things applications, such as e-health services with real time monitoring and automatic alerts, will be based on network management techniques for traffic prioritisation and will probably require different levels of quality of services (QoS) adapted to various customer demands and requirements. To this extent, the network architecture that will sustain the provision of these services will, precisely, be dependent on their functionalities requirements; such architecture will not be always based on the traditional Internet. It is clear that any regulation that hinders the implementation of these techniques, as some net neutrality proponents defend, will have harmful and long-lasting effects on the development of the Internet of Things.

So current European regulatory developments on QoS should also take into consideration the requirements imposed by new applications which may need different qualities of service and specific network managements practices.

### Privacy and data protection

Telefónica agrees that privacy and data protection is one aspect that deserves special attention in RFID applications. Some of the issues to be considered are:

- **Requirements for network operators**

New technological developments such as RFID systems have a clear impact on the requirements for an effective legal framework for data protection. Ensuring privacy and security of electronic communications is important to operators, customers and governments. However, the increase of security and privacy obligations imposed upon operators has the potential to harm the development of new technologies and the market. Security and integrity obligations need to be proportionate in order to facilitate the development of new applications that meet the privacy and data protection requirements but that also take into account cost and operability issues to allow the development of viable business models.

- **Global harmonization**

It should be taken into account that the global nature of the Internet might limit the ability of European regulation and its transposition into national laws to achieve complete and effective protection of European citizens' rights. The existence of servers and service providers in countries out of reach of European jurisdictions, with different national approaches to this matter of data protection, might pose conflicts that should be dealt with globally in parallel with the definition of "Internet of Things" within the European context.

Telefonica considers that the European Commission needs to be aware of this challenge as specific EU legislation is not applicable outside the EU. For instance, in the EU, the current legislation on data protection is very strict so EU companies are obliged to comply with certain rules that do not apply to third-country based companies.

Telefonica believes that it would be necessary to standardize the rules. Different levels of legislation impair competition among companies from the EU and from different countries (eg.: Japan is very advanced in the deployment of RFID applications). As a result, the operators located in those countries with strictest rules or legislation would be in a worse position than those operators located where no legislation or softer legislation is applicable.

It is important to take into account that the data stored in or produced by an RFID based device can involve personal data as defined in Article 2 of the Directive 95/46/EC (hereafter referred to as the "Data Protection Directive"), and as a result, might be affected by the current European legislation.

- **European regulation**

Telefonica considers it important and agrees with the European Commission to recognize the applicability of the Data Protection Directive to the RFID technology. We consider this is the best and more neutral decision for all.

Telefonica considers that new legislation would not be necessary for new RFID applications as current rules already covers RFID technology, in particular, the Data Protection Directive. Regulators must avoid any new

regulation as it would create more problems to have different rules for each service, and would create more problems in order to comply with the rules.

The Data Protection Directive and national data protection laws implementing the Directive create a coherent and extensive framework for protection of individuals with regard to the processing of personal data and to the transfer of such data. This legal framework is technology neutral, and would cover RFID technology.

Therefore, Telefónica considers that the EU should not focus on new legislation, but on fostering education and awareness programmes aimed at consumers and citizens in order to explain the benefits of RFID-based services. These awareness campaigns should be at the EU and national level through public/private partnerships.

## Security

Telefonica considers that security is a key issue to be considered for the successful development of RFID applications. Security problems may hamper the development of present internet applications and might create an environment where users have an increasing feeling of insecurity. Future developments in RFID should be aimed at creating an environment where those security problems that are affecting present internet applications are minimized.

Establishing strong protective tools (encryption, robust authentication procedures, and protection against unauthorised data collection to build individual profiling) should be left, in principle, to market forces and self regulation, with the application of existing rules for customer protection which Telefónica considers sufficient for the initial development of RFID applications. Only if this approach is clearly proven as inadequate as RFID services evolve, should additional rules, proportionate and not business deterrent, be considered.

It is also important to foster the harmonization of securities practices in different countries, within the EU as well as globally.

## Spectrum

Telefónica agrees with the harmonisation approach for spectrum for “Internet of Things” devices (i.e., “roaming” functionalities) currently supported throughout Europe in CEPT (ECC Recommendation 70-03) and EC (Decision 676/2002/EC and Decision 2006/771/EC amended with Decision 2008/432/EC).

Therefore Telefónica agrees that there is no need for further activities in the area of development of new regulation to be applied specifically to RFID. In any case, it is of utmost importance that any new regulation does not hamper innovation in this area.

As a general principle, further spectrum needs for these services should be assessed in detail in line with their market growth and demand.

## **Standardization**

Telefonica considers that European industry has an important role to play to promote the evolution of standards that allow the development of the Internet of Things.

The European Commission could play an active role in the harmonisation of EU standards and non-EU standards as the flow of products to be used in the Internet of Things does not stop at European borders.

An example of the specific areas that could be addressed is the standardization of radiofrequency characteristics of the devices to allow worldwide use of devices thus avoiding interferences in other services.

Another key area is the standardization of machine-to-machine (M2M) elements. There a significant number of standardization initiatives related to M2M. Many of these are aimed at providing solutions tailored to specific industry sectors. It is likely that new industrial sectors which adopt M2M will develop their own tailor-made capillary networks and wireless systems. Others stakeholders have concentrated on providing components of M2M solutions. However, there is still a lack of standards covering end-to-end solutions for M2M which are required to achieve economies of scale to reduce the cost of deploying and providing M2M services over telecoms networks and to properly address interoperability and interworking issues.

In areas where harmonisation is not complete, the European Commission should promote its development in bi-lateral contacts with the EU's trading partners and through the International Telecommunications Union.