



Valdani Vicari & Associati  
ECONOMICS & POLICY

# Study for the introduction of an e-labelling scheme in Europe

Cost Benefit Analysis

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DIGITALEUROPE 

  
**Mobile & Wireless  
Forum**



## EXECUTIVE SUMMARY

**This document is the final report of the study “Cost-Benefits analysis on the introduction of an e-labelling scheme in Europe”,** commissioned by DigitalEurope and the Mobile & Wireless Forum. This study was conducted by Valdani Vicari & Associati (VVA).

**The study analyses the costs and benefits associated with the potential introduction of an e-labelling scheme in Europe.** The analysis is based on desk research, an online survey of enterprises across the EU-28 and in-depth interviews with selected industry representatives and market surveillance authorities.

**The consumer electronics market encompasses a wide range of goods, including audio and video products, smartphones and printers,** which can be used for entertainment, communication purposes or home-office activities.<sup>1</sup>

From an economic perspective, the three largest product categories in the consumer electronics market are:

- *Telephony*<sup>2</sup>, which comprises fixed phones and mobile phones including smartphones;
- *Computing*<sup>3</sup>, including PCs, laptops, tablets and ancillary equipment such as printers or keyboards; and
- *TV/radio/multimedia*<sup>4</sup>, such as TVs, radios, cameras, speakers, headphones, etc.

Together they represent 60% of the product categories in the consumer electronic market.<sup>5</sup>

In terms of economic contributions, **telephony accounts for 43.7% of total European revenues in the three segments** (2016 data). In particular, mobile phones hold the “*lion’s share*” with € 69 billion<sup>6</sup> in revenues across Europe, out of a total of € 71 billion<sup>7</sup> in the entire telephony segment.

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<sup>1</sup> Consumer electronics figures in this section do not include electronic household appliances such as washing-machines or refrigerators.

<sup>2</sup> According to the Statista market definition the telecommunication market covers landline and mobile, smart telephones. See: <https://www.statista.com/outlook/15020000/102/telecommunication/europe>

<sup>3</sup> According to Statista “The Computing segment includes units for processing information (laptops, tablets, etc.) as well as additional equipment that is usually paired with them (printers, keyboards, etc.)”. See: <https://www.statista.com/outlook/15030000/102/computing/europe>

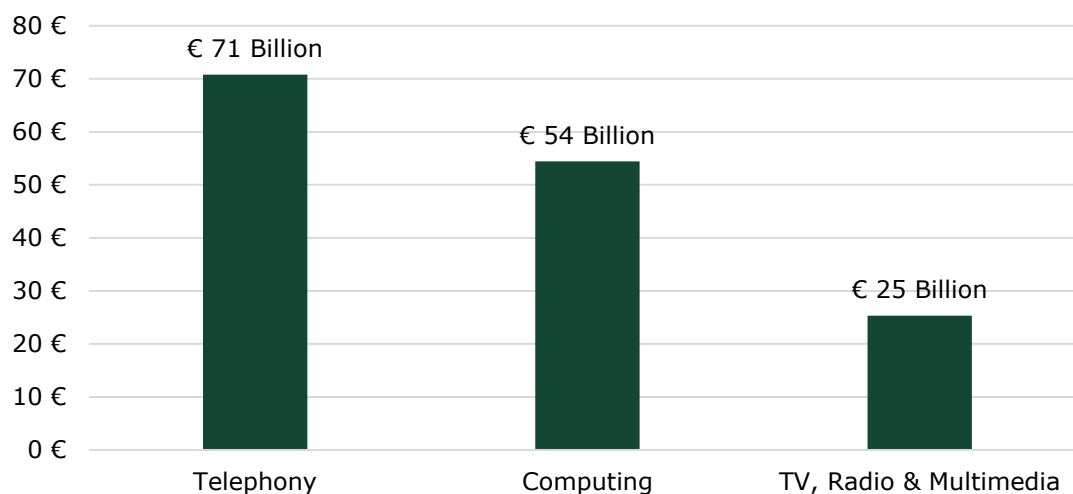
<sup>4</sup> According to Statista “The TV, Radio and Multimedia segment focuses on equipment designed to be used primarily for entertainment. It includes an array of classic household items, such as television and radio broadcast receivers, as well as their wider definition, including sound systems and loudspeakers”. See: <https://www.statista.com/outlook/15010000/102/tv-radio-and-multimedia/europe>.

<sup>5</sup> Estimation based on data from Statista and Eurostat (Procom). Note: consumer electronics figures in this section do not include electronic household appliances such as washing-machines or refrigerators.

<sup>6</sup> US\$ 82.1 billion, Statista, 2017 - <https://www.statista.com/outlook/15020000/102/telephony/europe#>

<sup>7</sup> Statista, 2017. “Telephony, Europe”. Available at: <https://www.statista.com/study/49837/consumer-electronics-report-telephony/> – US\$ 82.1 billion converted with an exchange rate of US\$ 1= EUR 0,863223 according to the XE website the 19/06/2018.

**Figure 1: Economic importance of different segments of the European consumer electronics market (revenues in EUR billion by segment, 2016)**



Source: Statista<sup>8</sup>

**Like other goods<sup>9</sup>, consumer electronics products must comply with a set of European Directives in order to be placed on the European Union's Internal Market.** The key EU Directives that apply to the sector include:

- Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment;
- Directive 2009/125/EC on the Eco-design requirements for energy-related products;
- Directive 2014/35/EU related to Electrical equipment designed for use within certain voltage limits;
- Directive 2014/30/EU on Electromagnetic compatibility;
- Directive 2014/53/EU on Radio equipment;
- Directive 2010/30/EU on Energy labelling;
- Directive 2001/95/EC on General Product Safety.

**Each product within the scope of these regulations is marked with a label to indicate compliance with Internal Market rules.**

**The *Blue Guide on the implementation of EU products rules 2016*<sup>10</sup> lists the types of information that product labels must provide.** Manufacturers must ensure their products comply with applicable legislation and, in order to ease the

<sup>8</sup> Statista, 2017. "Segment shares in total market revenue of the consumer electronics market in Europe in 2016". Available at: <https://www.statista.com/forecasts/759193/segment-shares-in-total-market-revenue-of-the-consumer-electronics-market-in-europe>

<sup>9</sup> For an overview, see: [https://ec.europa.eu/growth/single-market/european-standards/harmonised-standards\\_en](https://ec.europa.eu/growth/single-market/european-standards/harmonised-standards_en)

<sup>10</sup> The 'Blue Guide' on the implementation of EU products rules 2016, available at: [https://ec.europa.eu/growth/tools-databases/newsroom/cf/itemdetail.cfm?item\\_id=7326](https://ec.europa.eu/growth/tools-databases/newsroom/cf/itemdetail.cfm?item_id=7326)

traceability of products, labels should provide (among others) the following information:

- Identification of the manufacturer;
- Elements of identification of the product;
- Marks showing compliance with applicable legislation;
- Information about the components of the product.

In Europe, this information is currently provided through the following documentation:

- **The technical product documentation:** Union harmonisation legislation obliges the manufacturer to draw up technical documentation containing information to demonstrate the conformity of the product with the applicable requirements.
- **CE Marking** must be affixed on products and must be visible, legible and indelible. CE marking is a self-certification which proves that a product has been assessed and meets the essential requirements of the applicable Directives.
- **The EU Declaration of Conformity:** The manufacturer or the authorised representative established within the Union must also draw up and sign an EU Declaration of Conformity as part of the conformity assessment procedure provided for in Union harmonisation legislation.
- **Manufacturers have to meet traceability requirements** by indicating their name, registered trade name or registered trade mark and the address where they can be contacted. This information must be displayed on the product, on its packaging or in a document which accompanies the product.

**While product labels remain mostly physical in Europe, a growing number of advanced economies have now introduced the possibility for companies to indicate regulatory compliance through electronic label (e-label).** This study assesses the costs and benefits of introducing an electronic labelling system in Europe.

**The proposed e-labelling scheme is designed as an optional approach to a physical label and consists of:**

- **A label displayed electronically** for devices with built-in screen or devices without a built-in screen that can be connected to a screen.
- **A QR code**, or other machine-readable code, for equipments without an inbuilt screen and which cannot be connected to a screen.
- **A temporary label (e.g. film label)** to allow consumers and any market surveillance authority to see all product regulatory markings at the time of purchase/check without having to switch the device on.

The following information should be retrieved from the proposed e-labelling scheme:

- *CE Mark* (for products with a screen the certification mark can be resized proportionally to the screen);

- *Notified Body identification number* – when applicable;
- *Equipment Class Identifier* – when applicable;
- *Type, batch and/or serial numbers and the name of the manufacturer or the person responsible for placing the apparatus on the market.*

## KEY FINDINGS

1. **Under the current system, the total costs of indicating compliance are significant at € 797.13m per year across the three industries under analysis.**<sup>11</sup>
  - More than half of companies (51%) believe these costs to be “high” or “very high”.
  - About half of companies (43%) have been contacted by a market surveillance authority in the last 5 years for technical documentation related to the CE mark or problems in finding marking (for small devices).
2. **The introduction of the proposed e-labelling scheme would reduce the costs of indicating compliance for companies that are active on the European market by approx. 15%.**
  - These cost reductions are due to:
    - lower costs associated with updating compliance information for products that are already on the market;
    - lower costs related to differences in national compliance procedures;
    - lower administrative burdens associated with answering requests from market surveillance authorities.
  - The estimated cost reductions would be most significant for global companies and companies which export in countries already allowing e-labelling.
  - Because it is designed as an optional approach to the current system, the proposed scheme would not lead to undue administrative or adaptation costs for industry.
3. **Three out of four companies consider the proposed e-labelling scheme an improvement compared to today’s procedure, and they would adopt the e-label if it was allowed.**
4. **The proposed e-labelling scheme would have a positive impact on innovation.** By removing the requirements for a physical label, industry would be able to design smaller products and explore new designs.
5. **The proposed e-labelling scheme would not have notable impacts on the work of market surveillance authorities.**
  - Any one-off costs in terms of IT and personnel training are compensated for by reductions in the costs of:

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<sup>11</sup> NACE 26.20 Manufacture of computers and peripheral equipment, NACE 26.30 Manufacture of communication equipment, NACE 26.40 Manufacture of consumer electronics

- archiving/handling documents showing compliance;
- assessing/collecting the information showing compliance from companies.
- None of the market surveillance authorities consulted in the study indicated that the introduction of an e-labelling scheme would impose significant recurring costs.
- E-labelling would provide market surveillance authorities with an opportunity to improve their operational flexibility and activities related to handling information and response to requirements.

**6. In addition, e-labelling would lead to significant improvements over the current system in the following areas:**

- Reduced environmental impacts by lowering waste and preventing the need for printing the physical mark on the product;
- Positive impacts on traceability and transparency, as compliance information would be more easily available and last longer.

## Valdani Vicari & Associati



The VVA Group was established in 1992 by a team of professors from Bocconi University. Over 25 years it has developed into a full-service consultancy with offices in Milan and Brussels. Our in-house team of about 100 consultants, academics, economists and researchers specialises in providing high quality advisory services to public and private sector clients in the following areas:

- Economics and policy
- Market research
- Business Consulting
- Digitisation, digital marketing
- Artificial intelligence solutions

VVA Economics and Policy, the European public policy company of VVA, specialises in advising EU level stakeholders on the policy implications of digital technology and the socio-economic impacts of regulatory interventions in the digital economy. We have extensive expertise working with the European Commission on issues surrounding digital content, online platforms, spectrum, electronic communications, broadband, market access, market surveillance & enforcement and many more.

Within the VVA Group, apart from our Economics & Policy practice, we also have an in-house digital marketing team which specialises in online social media marketing using a proprietary platform (Rankit: [www.rankit.it](http://www.rankit.it)); a team working on artificial intelligence solutions for private sector clients ([ndg.ai](http://ndg.ai)) and a team working on tax issues across a wide variety of sectors including digital technology.

Finally, beyond VVA, we have developed a wide ranging network of partners whom we can draw on in our advisory work: we are members of the European Business and Innovation Centre Network ([www.ebn.be](http://www.ebn.be)), of the European Network for Social and Economic research ([www.ensr.eu](http://www.ensr.eu)) and of the Big Data Value association ([www.bdva.eu](http://www.bdva.eu)) which provides us immediate access to consultancy partners in all EU countries and globally.



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# 1 Structure of this report

This final report presents the results of our cost-benefit analysis of the introduction of an e-labelling scheme in the EU. The document is structured as follows:

- **Chapter 2** highlights the aims and objectives of the costs & benefits analysis, along with the methodology;
- **Chapter 3** describes and provides an assessment of the current procedures to indicate compliance of products with European Union harmonisation legislation;
- **Chapter 4** describes the proposed e-labelling scheme;
- **Chapter 5** presents the assessment in terms of costs and benefits for industry, market surveillance authorities and society overall (highlighting potential impacts on consumers and on the environment);
- **Chapter 6** presents conclusions about the potential adoption of an e-labelling scheme in the European Union.

The **annexes** contain:

- **Annex 1:** List of interviewees;
- **Annex 2:** Online survey;
- **Annex 3:** List of literature.

## 2 Introduction

### 2.1 Study objectives

The purpose of the study is to assess the costs and benefits of e-labelling in Europe and to compare them with the costs of traditional (paper-based) product labelling with taking into the account the current regulatory objectives.

The study assesses the introduction of e-labelling in the EU, with a focus on:

1. Costs for industry (operations, repurposing, etc);
2. Costs for market surveillance authorities;
3. Economic benefits, including trade facilitation;
4. Benefits for market surveillance authorities.

The study covers the radio equipment industry, to be understood as the industries falling within the scope of the Radio Equipment Directive (RED)<sup>12</sup>. In order to define the industries falling under the Radio Equipment Directive at the most detailed level possible in economic terms, based on NACE-Codes, and PRODCOM-Codes, we employed a three-step process:

1. We analysed the Radio Equipment Directive to understand which products are covered (Art. 1 and Art. 3(1) of the Directive, taking into account Article 1.3 and Annex I of the RED which excludes explicitly from its scope equipment to which it does not apply);
2. To increase representativeness and to cross-check relevance, we used a “*best-fit*” approach to establish the link between the identified products and the corresponding 2015 - PRODCOM codes.<sup>13</sup> In PRODCOM products are identified by an 8-digit code, where the first four digits are the classification of the producing enterprise given by the Statistical Classification of Economic Activities in the European Community (NACE);
3. By selecting the first four digits of each PRODCOM code, we establish the link between the equipment included in the scope of the study and the NACE classification.

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<sup>12</sup> An overview table of sectors falling within the scope of Radio Equipment Directive – PRODCOM - NACE codes is provided as a separate annex to this report.

<sup>13</sup> <http://ec.europa.eu/eurostat/web/prodcom>

**Figure 2: Steps in the mapping process**



The table below provides an overview of the structure of the selected NACEs that, according to our methodology, fall under the Radio Equipment Directive.

**Table 1: Selected NACE coverage & Structural Business Statistics<sup>14</sup>**

NACE CODE	Number of enterprises (Eurostat SBS - data as of 2015)	Turnover million euro (Eurostat SBS - data as of 2015)
NACE 26.20 Manufacture of computers and peripheral equipment	6,035**	135,935.3
NACE 26.30 Manufacture of communication equipment	5,884	41,847.8
NACE 26.40 Manufacture of consumer electronics	2,776	21,500.9

\*\*\*Data as of 2014

Source: Eurostat

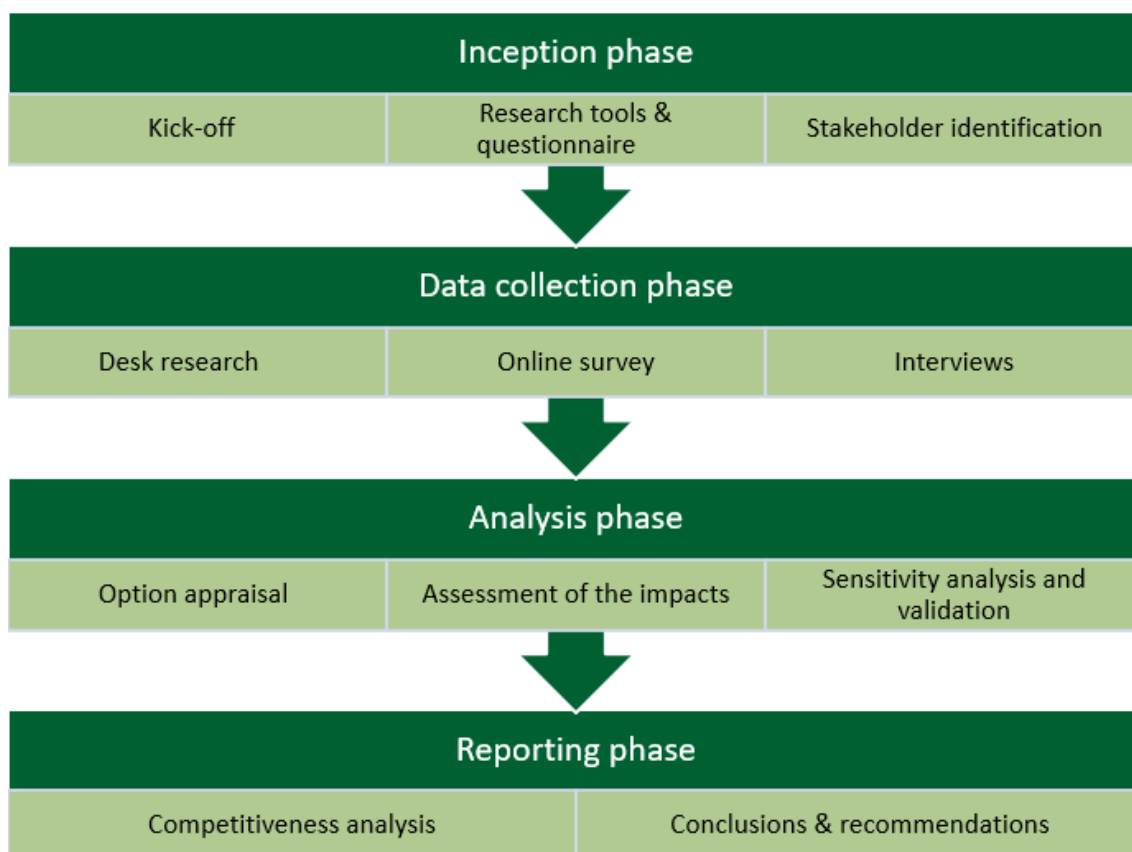
## 2.2 Methodological Framework

The figure below details the overall methodological approach. Subsequent sub-sections define the methodology used for the data collection in greater detail. The study was divided into three phases: Data collection, Analysis and Reporting:

1. **Data collection** is a combination of desk research, online survey and interviews with companies affected by the proposed e-labelling initiative and targeted interviews with market surveillance authorities (MSAs).
2. **Analysis** includes the assessment of impacts in a cost benefit model both for the current situation (Baseline) as well as for each of the proposed potential e-labelling initiatives.
3. Finally, **reporting** includes the appraisal of each of the options under consideration, a sensitivity analysis, the development of conclusions and recommendations and the drafting of the present final report.

<sup>14</sup> Data according to latest update from Eurostat of 15/05/2018. It should be noted that the NACE classification only provides a framework for collecting and presenting statistical data according to economic activity, not in relation to the product. Therefore, it is possible for one company to be included in one NACE, but it might not need to comply with EU harmonised legislation, or it might need to comply with EU legislation for some of its products but not for others

**Figure 3: Methodological approach**



### 2.3 Structure of the cost-benefit analysis

The main analytical tool in the present study is a cost-benefit analysis. The cost benefit analysis shows:

- The costs and benefits of the current system of indicating compliance<sup>15</sup> (see Section 3);
- The projected cost and benefits linked to the introduction of an e-labelling scheme (see Sections 4 and 5)
- A sensitivity analysis which indicates how robust the options appraisal is to variations in the underlying parameters of the analysis (available upon request).

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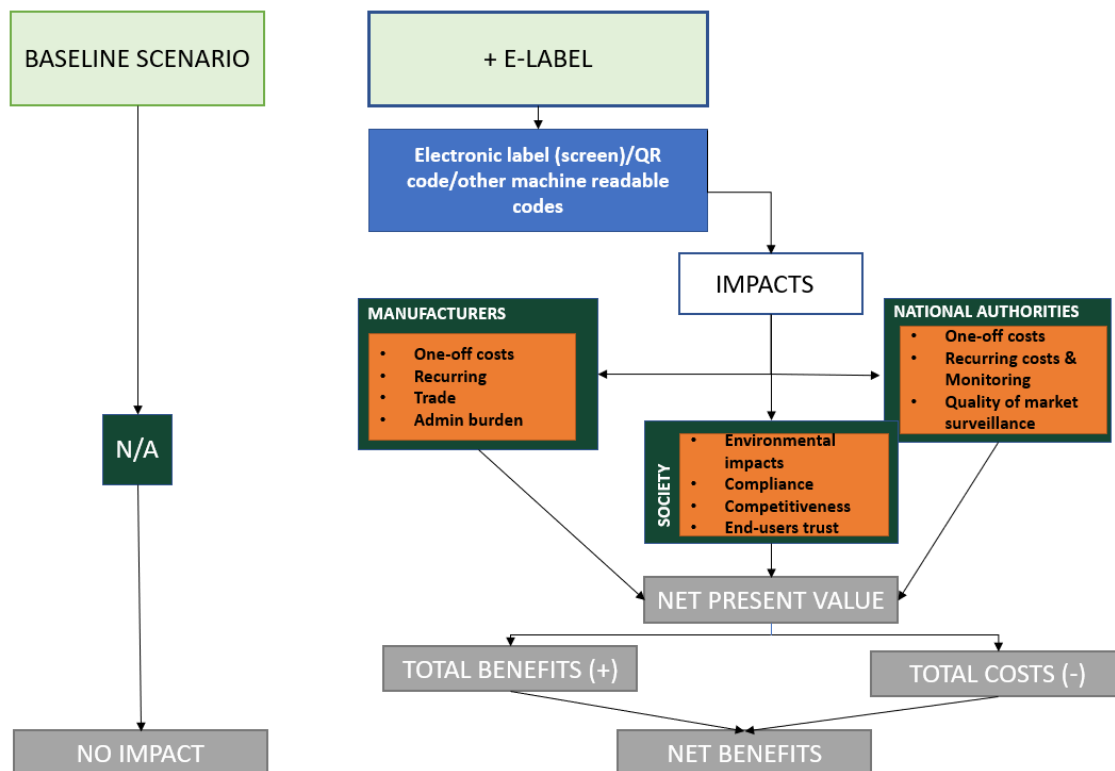
<sup>15</sup> By “costs of indicating compliance” we mean the sum of the following activities: 1) Administrative burden for answering requests from market surveillance authorities regarding documents needed to demonstrate compliance; 2) Displaying or publishing compliance information, including etching the CE Marking and other labels on products; 3) Updating compliance information for existing products; 4) Complying with different compliance procedures across Member States; 5) Producing the EU Declaration of Conformity; 6) Meeting and fulfilling the traceability requirements of the products; 7) General IT & labour costs related to it.



The cost-benefit analysis in this report is based on results of interviews with enterprises and market surveillance authorities as well as an online survey of companies. The online survey covers the NACE sectors listed in Table 1, a breakdown of responses by country and sector is in Annex 2.

Where no quantitative data are available the analysis juxtaposes quantitative results with qualitative elements to arrive at a comprehensive picture of the merits of the proposed introduction of e-labelling. The figure below provides the final structure for the cost-benefit model.

**Figure 4: Structure of the cost-benefit model**



The current scenario constitutes the baseline against which the impacts of the alternative option (the introduction of an e-labelling scheme) is assessed.

## 3 Description and assessment of the current system for indicating compliance

### 3.1 Regulatory requirements under Union harmonisation legislation

Generally, **when a product is placed on the market, the manufacturer is obliged to take all measures necessary to ensure compliance with European Union harmonisation legislation.**<sup>16</sup> Manufacturers have to indicate compliance of their products through the following requirements/documents (European Commission, 2017):<sup>17</sup>

1. **The technical product documentation** - Under Union harmonisation legislation the manufacturer is obliged to draw up technical documentation which shall contain information that demonstrates that the product complies with the requirements. Moreover, the technical documentation has to be available as soon as the product is placed on the market, regardless of its geographical origin or location. One more important aspect is that the technical documentation has to be kept for 10 years starting from the date of the product's placement on the market. Exceptions can be made only if there is applicable Union harmonisation legislation which provides expressly for a different duration.

The contents of the technical documentation are laid down, in each EU harmonisation act, in accordance with the products concerned. Also, the documentation must include a description of the product and of the way in which it is intended to be used. This must cover the design, manufacture and operation of the product. The documentation must contain the details considered necessary, from a technical point of view, for demonstrating the conformity of the product with essential requirements of Union harmonisation law. The technical documentation also has to contain an "*adequate analysis and assessment of the risk(s)*". This consists in the identification of all the possible risks of the product and the determination of the applicable essential requirements. Furthermore, if there are cases where a product has been redesigned and conformity has been reassessed, the technical documentation must provide all versions of the product (this must include the description of the changes, how the various versions of the product can be identified and the different conformity assessments).

2. **CE Marking** - Many products require CE marking before they can be sold in the EEA ( EU + Iceland, Lichtenstein and Norway). The CE marking must be

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<sup>16</sup> See COM Notice (2016) 1958 final "The 'Blue Guide' on the implementation of EU product rules 2016" of 05/04/2016, section 3.1, p 28-31 on [ec.europa.eu/DocsRoom/documents/12661/attachments/1/.../pdf](https://ec.europa.eu/DocsRoom/documents/12661/attachments/1/.../pdf)

<sup>17</sup> Source: Impact assessment for the new Compliance and Enforcement regulation issued by the European Commission in 2017. The study is available at: <https://ec.europa.eu/docsroom/documents/26976>

affixed to products and must be **visible, legible and indelible**. The CE marking is a self-certification which proves that a product has been assessed and meets EU safety, health and environmental protection requirements. It is valid for products manufactured both inside and outside the EEA, that are then marketed inside the EEA.<sup>18</sup>

3. **The EU Declaration of Conformity** - The manufacturer or the authorised representative established within the Union must also devise and sign an EU Declaration of Conformity. The EU Declaration of Conformity must contain all relevant information to identify the Union harmonisation legislation according to which it is issued, as well as all relevant information concerning the manufacturer, the authorised representative, the Notified Body (if applicable), the product, and where appropriate a reference to harmonised standards or other technical specifications. Only a single declaration of conformity is required where a product is covered by several pieces of Union harmonisation legislation requiring an EU Declaration of Conformity.<sup>19</sup>
4. **Manufacturers have to meet and fulfil the traceability requirements of the products** - This is done by indicating the name, registered trade name or registered trade mark and the address at which they can be contacted. This information must be displayed on the product, on its packaging or in a document which accompanies the product. The address must indicate a contact point for the manufacturer. Likewise, importers have to indicate their name, registered trade name or registered trade mark and the address at which they can be contacted, on the product or, where that is not possible, on its packaging or in a document accompanying the product. On top of this, manufacturers must also make sure that their product bears a type, batch, serial or model number or other element allowing their identification (if the nature or size doesn't allow it, it must be provided on the packaging or in a document accompanying the product).

**If there is a founded request, the manufacturer must provide the competent national authority with all the information and documentation needed to demonstrate the conformity of the product** (European Commission, 2017). This must be done in a language accessible for the authority. Moreover, if the products placed on the market present any risk, the manufacturer must cooperate with the authority to address this risk. Manufacturers must also identify any economic operator to whom they have supplied the product if the market surveillance authorities request it. They must be able to present this information for a period of 10 years after they have supplied the product (European Commission, 2017).

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<sup>18</sup> Source: the 'Blue Guide' on the implementation of EU product rules 2016. Available at: <http://ec.europa.eu/DocsRoom/documents/18027/>

<sup>19</sup> Source: the 'Blue Guide' on the implementation of EU product rules 2016. Available at: <http://ec.europa.eu/DocsRoom/documents/18027/>

While manufacturers are responsible for ensuring product compliance, **importers** must make sure that the products they place on the market comply with the applicable requirements and do not present a risk to the European public. The importer has to verify that the manufacturer outside the EU has taken the necessary steps and that the documentation is available upon request.<sup>20</sup> **Distributors** are also expected to be aware of the legal requirements and must be able to demonstrate to national authorities that they have acted with due care and have affirmation from the manufacturer or the importer that the necessary measures have been taken.<sup>21</sup>

When asked about the functioning of the current system, the available information is mostly qualitative in nature. Indeed, the benefits of the current process to indicate compliance are difficult to identify, as they are related to the system and objectives of Union harmonisation legislation in general (European Commission, 2017) which commands wide-spread support, rather than the specific procedures for indicating compliance.

The key features of the current system that are appreciated by companies and market surveillance authorities include:

**For companies:**<sup>22</sup>

- End-user trust;
- Familiarity with the current system (i.e. the system's benefit is that it has been around for a long time and everyone knows how to deal with it); and
- Creation of a level playing field for companies across the EU;

**For market surveillance authorities:**<sup>23</sup>

- The fact that there is extensive technical documentation, but this does not have to be made public and control of technical knowledge, confidentiality and business know-how are maintained within the firm;
- The fact that manufacturers using Harmonised Standards listed under respective EU legislation in the OJEU, benefit from the so-called "*presumption of conformity*" until the moment that non-compliance is proven by the Market Surveillance Authorities; and
- Ex-post checks by market surveillance authorities are quite specific and usually MSA requests are quickly solved in bilateral communication and exchange of emails or electronic documents with the company, even in the absence of a systematic digital procedure.

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<sup>20</sup> Source: the 'Blue Guide' on the implementation of EU product rules 2016. Available at: <http://ec.europa.eu/DocsRoom/documents/18027/>

<sup>21</sup> Source: the 'Blue Guide' on the implementation of EU product rules 2016. Available at: <http://ec.europa.eu/DocsRoom/documents/18027/>

<sup>22</sup> Source: Impact assessment for the new Compliance and Enforcement regulation issued by the European Commission in 2017. The study is available at: <https://ec.europa.eu/docsroom/documents/26976>

<sup>23</sup> Source: Impact assessment for the new Compliance and Enforcement regulation issued by the European Commission in 2017. The study is available at: <https://ec.europa.eu/docsroom/documents/26976>

### 3.2 The role of market surveillance authorities

**Previous studies have found that different Member States (MS) have different ways of dealing with market surveillance** (European Commission, 2017). For instance:

1. Market surveillance can be organised at a national (e.g. Slovenia) or a regional (e.g. Germany) level competence;
2. Market surveillance authorities (MSAs) can be organised along industry sectors (i.e. more than one authority dealing with market surveillance, but with different sector competencies) or they can be more centralised;
3. MSAs have different approaches to market surveillance. They can:
  - Be primarily proactive: the MSA initiates inspections and checks whether products are compliant according to the relevant Directives, requiring the CE marking. Certain MSAs perform random checks (i.e. Belgium), while others select specific product/ companies/ sectors following a risk-based approach (e.g. Netherlands);
  - Be primarily reactive: the MSA reacts to complaints from consumers, associations, competitors or following an accident (e.g. Germany); or
  - Feature a mix of both of these approaches.

**Under both the reactive and proactive approaches, if preliminary assessment leads to *initial suspicion*, the MSA approaches manufacturers, importers and resellers for additional information.** The request is usually rather specific (not limited to making documentation available but explaining parts within it) and MSAs get directly in touch with the investigated economic operator, either via a telephone call or via a visit. During this phase, most of the exchanges of documents happen digitally via e-mail, even if in certain countries paper documentation is still required (European Commission, 2017).

**The majority of market surveillance concerns arise with respect to imported goods rather than manufacturers within the EU** (European Commission, 2017). At the same time, market surveillance authorities pointed out that sometimes it can be difficult to receive technical files from importers because they are not able to obtain the file from the manufacturer abroad. While digital identification of each product (identity of the manufacturer, involved Notified Body, Declaration of Conformity, and a unique identification number of the product which links it to a specific batch) could help EU market surveillance authorities with their requests for further information from third country authorities, such a system would still require that the underlying information that is fed into it by the third country manufacturer is actually correct (European Commission, 2017).

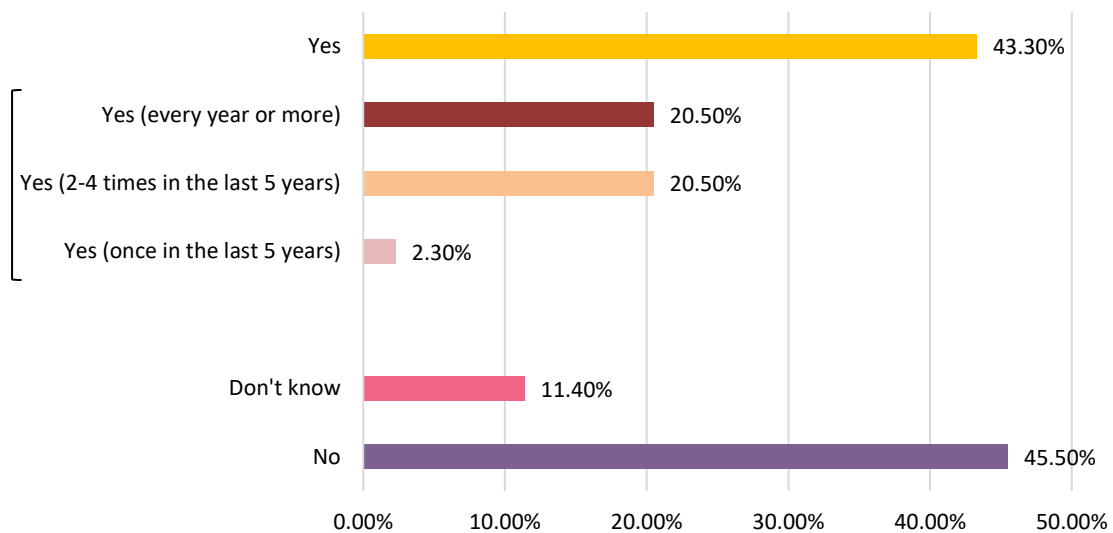
**In the company survey conducted for this study, 43.3% of respondents indicated that they had been contacted by a market surveillance authority in the last 5 years.**

On average, on the basis of the responses to the online survey, across the three relevant sectors we estimate that there are **1.62 inspections/requests per company every 5 years**.

Most companies stated that these inspections/requests are due either to:

- Requests for technical documentation for every product placed on their market, related to the CE mark or just for specific EU Directives;
- Problems in locating the marking (for small devices).

**Figure 5: Have you ever been contacted by a market surveillance authority on issues related to the marking on your products over the last five years?**



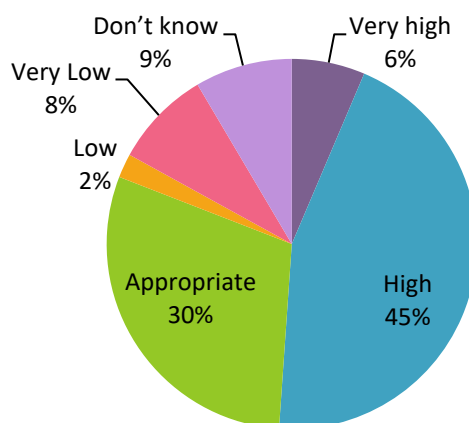
Source: online survey, sample: 44 respondents

### 3.3 Costs for industry of the current system for indicating compliance

#### 3.3.1 Perceptions of the costs of indicating compliance by industry

The online survey asked companies about their perceptions regarding the appropriateness of the current costs of labelling/marketing to indicate compliance. About **51% of respondents believe that today's costs are either high or very high**, compared with about 30% who considered the costs appropriate and about 10% who thought the costs are low or very low (Figure 6).

**Figure 6: Under the current regulations and business practices, do you consider the costs and operational burden of traditional labelling/marketing to be...**



Source: online survey, sample: 47 respondents

Investigating the reasons behind these answers, most of the respondents identified the following cost drivers:

- **Marking is expensive**, no matter whether it is done by laser etching or ink and glue. There is no cheap method to mark mobile phones and high tier products like tablets – without mentioning the negative impact on the product's aesthetic quality which can never be avoided but only minimised;
- **With paper/printing labelling it is difficult to monitor last minute changes** and apply them in production. Any change or update of the labelling requirements triggers costs associated with re-design of labels and re-work of products;
- **Most ICT products are made for distribution in global markets** and must fulfil different regions' regulatory requirements. Many different markings worldwide with frequent changes present a challenge to accurately meet the requirements for a global product. This can lead to inadvertent non-compliance and wastage of pre-printed labels.

- The large number of different marks required is **difficult to implement on smaller products**, due to regulatory constraints on the size of labels;

### 3.3.2 Estimating the costs of indicating compliance under the current system

Based on the Evaluation of the Internal Market Legislation for Industrial Products,<sup>24</sup> the total cost of compliance with Union harmonisation legislation for laptop manufacturers amounts to 2% of annual turnover. Given the similarity with the sectors under analysis in this study, this estimate can be extended to our definition of consumer electronics based on the three NACE categories (refer to Table 1 for the sector definition).

Furthermore, based on interviews with industry stakeholders, *the cost of indicating compliance* amounts to 20% of their overall cost of compliance with Union harmonisation legislation.<sup>25</sup>

Since the turnover of the almost 14,695 companies within the scope of the study was € 199,284 million in 2015<sup>26</sup>, **the total cost of indicating compliance under the current system can be estimated at approximately € 797.14m per year.**<sup>27</sup>

### 3.4 Costs for market surveillance authorities under the current system for indicating compliance

The data collected for this study and the findings of the Evaluation of Regulation (EC) No 765/2008<sup>28</sup> show that resources for market surveillance are limited. Limited resources (staff, budget, laboratory capacity) for market surveillance are often mentioned in the evaluation study as a factor reducing authorities' ability to detect and punish non-compliance. In their national reports concerning market surveillance activities carried out between 2010 and 2013, authorities indicated that lack of resources affected enforcement action in at least 12 Member States.

<sup>24</sup> According to this study, the annual costs of compliance of IM legislation for laptop producers amount to 2% of their annual turnover. Considering the similar characteristics of the products, we applied this percentage cost to the three industries under analysis.

<sup>25</sup> The total costs of indicating compliance is the sum of the following activities: 1) Administrative burden for answering requests from market surveillance authorities regarding documents needed to demonstrate compliance; 2) Displaying or publishing compliance information, including etching the CE Marking and other labels on your products; 3) Updating compliance information for existing products; 4) Complying with different compliance procedures across Member States; Producing the EU Declaration of Conformity; 5) Meeting and fulfilling the traceability requirements of the products; 6) General IT & labour costs related to it.

<sup>26</sup> Eurostat: [http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=sbs\\_na\\_sca\\_r2&lang=enX](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=sbs_na_sca_r2&lang=enX)

<sup>27</sup>  $(\text{Annual turnover}) \times (\% \text{total cost of compliance}) \times (\% \text{costs of indicating compliance}) \times 100\%$  incidence rate (=assuming that all population of enterprises in the sectors covered by this study have to comply with the Union Harmonization legislation for product compliance).

<sup>28</sup> Ex-post evaluation of the application of the market surveillance provisions of Regulation (EC)

No 765/2008. Available at:

<https://ec.europa.eu/docsroom/documents/26963/attachments/1/translations/en/renditions/pdf>



The analysis carried out during this evaluation shows that:

- Resources allocated to market surveillance amount on average to a few euros per thousand inhabitants (with the exception in particular of medical devices, cosmetics and toys) and up to a maximum of 0.5 inspectors per million inhabitants;
- The total budget available to all Member State authorities decreased during the 2010-2013 period (from €133.4m to €123.8m) and it is concentrated in a small number of countries with large differences in terms of budget available in each country;
- A similar trend was noted for human resources: over the period 2010-2013, there was a reduction of staff available to MSAs together with a concentration of staff in a small number of Member States;
- Similarly, the number of customs officials has seen a continuing downward trend of about 10% since 2010.

Despite the lack of resources, **the costs of individual activities are very difficult for MSAs to estimate** because they mainly work with a fixed budget that cuts across all their activities and it cannot easily be broken down. In some countries, the regulatory framework allows MSA to ask manufacturers to share their products free of charge (Germany), but this is not the case in all countries.

The table below shows the responses from MSAs about the costs associated with different day-to-day market surveillance activities related to indicating compliance.

**Table 2: Perceptions among MSAs of the costs related to indicating compliance**

Type of activity	Rank	Comment
Assessing/collecting the information showing compliance from companies	1 <sup>st</sup>	These activities are considered very high in costs
Interacting with market surveillance authorities in other Member States to assess information showing compliance	2 <sup>nd</sup>	Perceived very burdensome and time consuming
Interacting with third parties (e.g. consumers, other public bodies, courts, etc) regarding the search for information showing compliance	2 <sup>nd</sup>	Perceived very burdensome and time consuming
Training of new/existing employees on the process of verifying compliance <sup>29</sup>	3 <sup>rd</sup>	Specific training to new employees is considered very costly
Costs for archiving/handling of documents showing compliance <sup>30</sup> (Note: MSA request relevant documents in electronic format)	4 <sup>th</sup>	Perceived as not very burdensome in terms of time and costs. Considered the least important among the listed activities.

Source: European Commission 2017, plus interviews with Market Surveillance Authorities

<sup>29</sup> This includes trainings, external advice and assistance to staff from other public agencies.

<sup>30</sup> This includes post stamps, costs for paper and printer ink supplies, costs for handling storage and archiving, as well as costs of discarding documents.

## 4 Description of the proposed e-labelling scheme

The proposed e-labelling scheme is an optional approach to the physical label or nameplate which is currently required to comply with EU harmonisation legislation for products. Under the proposal, companies may continue to employ physical labelling techniques consistent with existing rules and guidance if they so desire or they may switch to e-labelling.

The proposed e-labelling scheme consists of:

- A **label electronically displayed for devices with in-built screen or devices without in-built screen that can be connected to a screen**;
- A **QR code** or other **machine-readable code** (surface labelling) for **equipment without an in-built screen and which cannot be connected to a screen**;

The following information should be retrieved from the proposed e-label:

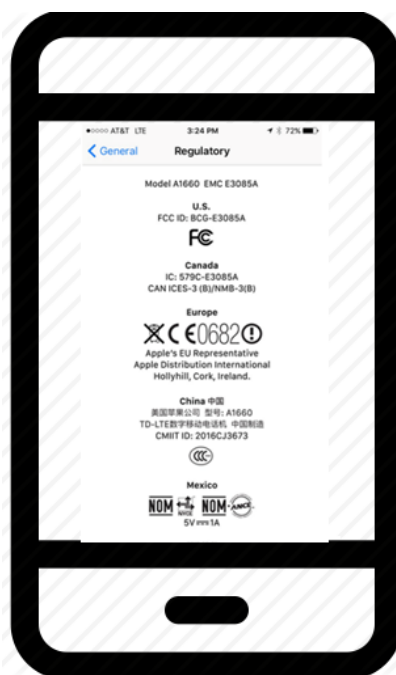
- *CE Mark* (for products with a screen the certification mark can be resized proportionally to the screen);
- *Notified Body identification number* – when applicable;
- *Equipment Class Identifier* – when applicable;
- *Type, batch and/or serial numbers and the name of the manufacturer or the person responsible for placing the apparatus on the market.*

A temporary label (e.g. film label) would be added to the product allowing the consumer and any Market Surveillance Authority to see all product regulatory markings at the time of purchase without having to switch the device on.

**The form of the e-labelling scheme is only applicable to devices with a screen** (e.g. integrated screen) or **devices without a built-in screen but that can be connected to a screen** and if the following principles are observed:

- *Manufacturers provide access to compliance information in a reasonable number of steps* (3-steps-approach) and be relatively straightforward (i.e. settings –general menu –regulatory);
- The e-label will be *retrievable for display with the method described in product documentation* (e.g. accompanying instructions);
- *No access codes or permissions* should be required for accessing all the information needed to demonstrate conformity;
- *Security, Access and Storage*: manufacturers are responsible for ensuring that there is a working link between the e-label and the service hosting the compliance information. Manufacturers will have the relevant information programmed in such a way that it cannot be easily modified or removed by a third-party;

**Figure 7: Sample of e-label - electronically displayed form**



Source: VVA elaboration based on ITIF, 2017

The e-label is a **QR code** or other machine-readable code (surface labelling - printed, painted, moulded, etched, engraved or embossed or any suitable means) for **equipment without an in-built screen and that cannot be connected to a screen** and if the following principles are observed:

- The QR Code (or other machine-readable code) must be *legible, durable and readily visible*. If printed or using adhesive sticker, the *ink shall be permanent/indelible*. It may be printed on warranty card, user manual or smallest packaging unit;
- The QR Code (or other machine-readable code) must be *retrievable for display* with the method described in product documentation;
- *A smartphone can be used as a code-scanner*, displaying the code and converting it to a standard URL for a website;
- Scanning the URL with a smartphone takes the customer to the support website for that product;
- *Security, Access and Storage*: manufacturers are responsible for ensuring that there is a working link between the e-label and the service hosting the compliance information. The manufacturer has the relevant information programmed in such a way that it cannot be easily modified or removed by a third-party.

**Figure 8: Sample of e-label – QR code form**



Source: ITIF

In the course of the interviews, Market Surveillance Authorities were also asked to comment (either positively or negatively) about the proposed e-labelling scheme.

The most cited comments were:

1. Information displayed in the e-label should be available in all EU official languages;
2. Some market surveillance authorities expressed their concern about the QR-code in relation to:
  - *The need for an internet connection:* the lack of broadband coverage (especially in remote/rural areas) would represent a burden for market surveillance activities;
  - *Security and storage of the information:* labelling information must be available for the entire product life-cycle, that can last longer than the life of the company which placed the products in the markets. There must be continuity and certainty about the possibility to retrieve the labelling information at any time.
3. There are also some doubts about the electronic display form. For instance, if during market inspections, the devices would need to be switched on to check regulatory information, this would prevent these products from being sold as “new” products. Therefore, a temporary physical label allowing any Market Surveillance Authority to see all product regulatory markings at the time of purchase without having to switch the device on, was deemed important.

## 5 Assessment of the introduction of an e-labelling scheme in the Europe

### 5.1 Costs and benefits for companies

Our assessment shows that the introduction of an e-labelling scheme is likely to lead to very few costs but significant benefits for companies operating in the three industry sectors under analysis (see Table 1 for a sector definition).

#### 5.1.1 Additional costs and burdens of e-labelling

Our results show that **most companies do not think that the introduction of an e-labelling scheme<sup>31</sup> will impose considerable additional costs**. Most interviewees could not provide monetary estimates but expressed their opinion in terms of direction and magnitude of costs:

1. There would be a **one-off setup cost** to create/adapt the in-house IT system to the new process for indicating compliance. The significance of these costs would depend on how **compatible** it is with each company's current procedures. For example, the e-labelling scheme may require companies to provide information according to a pre-defined format which may not be compatible with the software used in-house at the moment to produce compliance documentation;
2. **Recurring costs** would differ depending on the number of products in each company's portfolio, the user friendliness of the e-label format standards, and the product life cycle;
3. **Security costs** would not change as sensitive information is kept by economic operators.

Overall, business perceptions are that by designing the e-labelling scheme as an optional approach (i.e. manufacturers choose whether to use an electronic label or stick to their current physical label) for displaying compulsory labelling requirements<sup>32</sup>, the initiative **minimizes any administrative burden/adaptation costs for industry**.

#### 5.1.2 Cost savings and other benefits of e-labelling

Indeed, instead of additional costs, companies consulted for this study thought that costs would be significantly lower if the proposed e-labelling scheme was allowed. Indeed, the online survey results show that the **e-label would lead to an**

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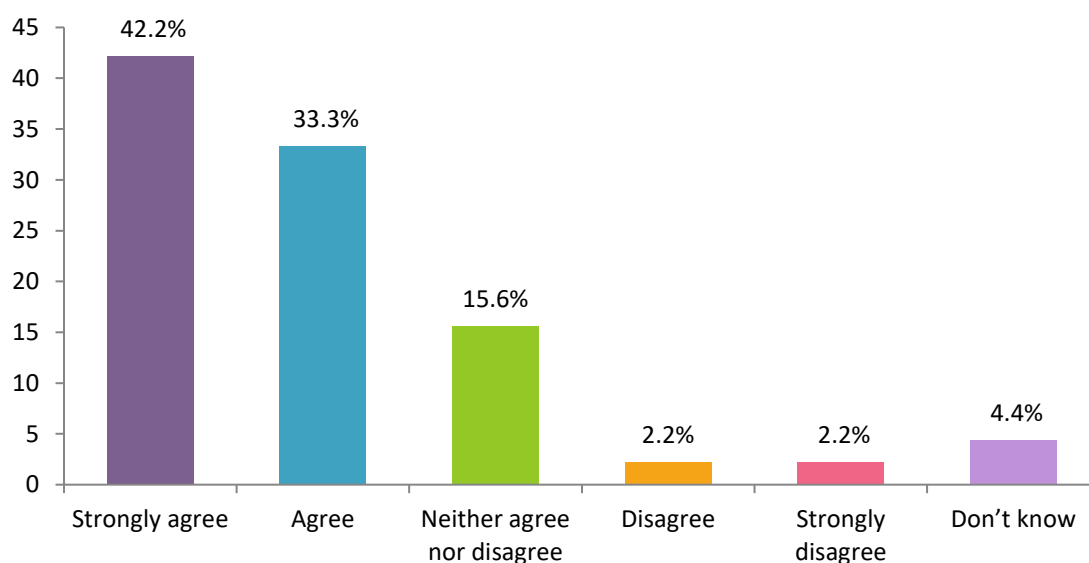
<sup>31</sup>As designed in section 4.

<sup>32</sup> in Union Harmonisation Legislation

**estimated reduction of 14.28%<sup>33</sup> in the current costs of indicating compliance for industry.<sup>34</sup>**

In line with this result, more than **75% of respondents to the online survey thought that e-labelling would be an improvement over the current system** for indicating compliance, compared with only 4.4% who thought the opposite.

**Figure 9: Do you think that the introduction of an e-labelling scheme as an optional approach to a physical label would be an improvement compared to today's procedure of indicating compliance?**



Source: online survey, sample: 45 respondents

In terms of benefits, **more than 50% of the respondents** to the surveys believe that by introducing an e-labelling scheme, **the following cost categories will decrease or strongly decrease compared to the current system:**

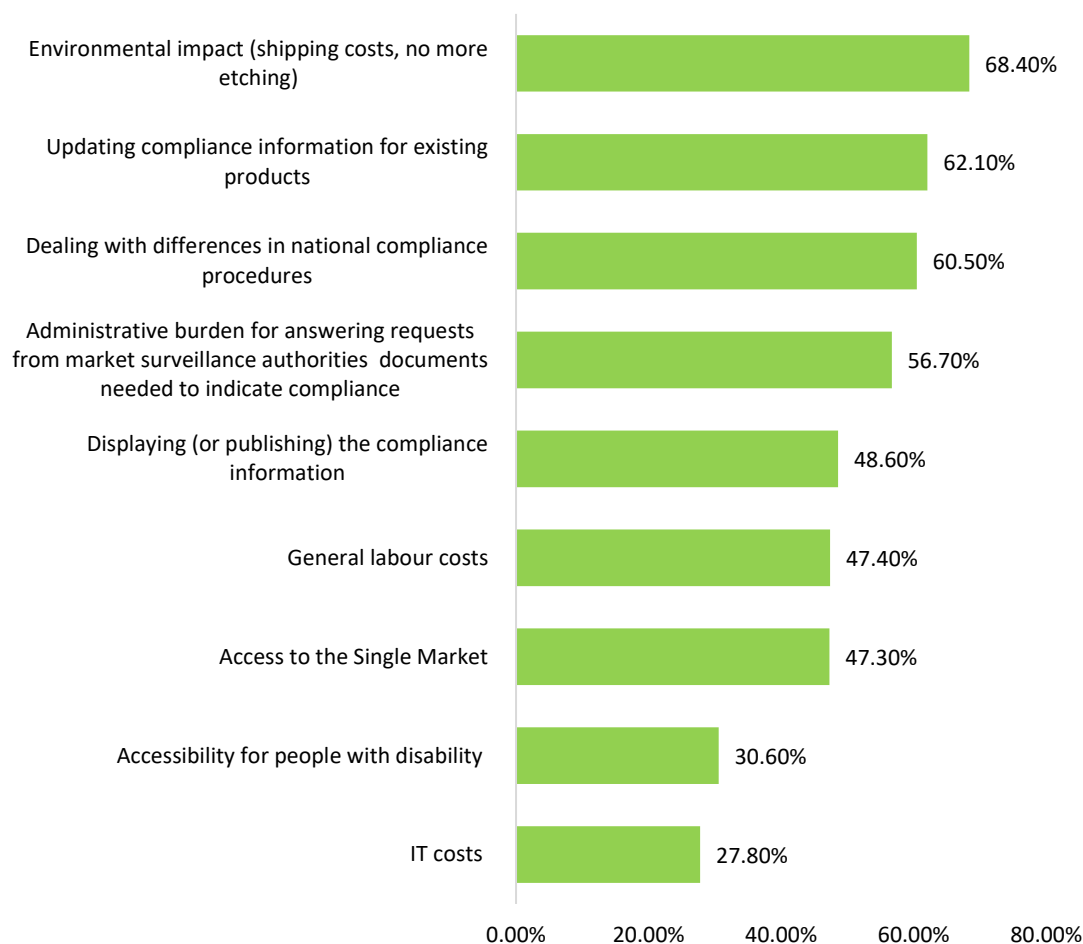
1. Environmental impacts (shipping costs, no more etching) – *68.40% of respondents agree;*
2. Updating compliance information for existing products – *62.10% of respondents agree;*

<sup>33</sup> This percentage is the result of a weighted average of the replies obtained in the online survey, please refer to Figure 27 & 28 in Annex 2. This translates into a monetary estimate of €113.83 million a year, a similar order of impact as in the US. In fact, it was estimated that in 2014 the US e-labelling scheme would enable manufacturers to save over USD80million a year. Please refer to: <http://thehill.com/blogs/floor-action/house/217448-house-passes-e-labeling-bill>

<sup>34</sup> The costs of indicating compliance represents the sum of the following activities: 1) Administrative burden for answering requests from market surveillance authorities regarding documents needed to demonstrate compliance; 2) Displaying or publishing compliance information, including etching the CE Marking and other labels on your products; 3) Updating compliance information for existing products; 4) Complying with different compliance procedures across Member States; 5) Producing the EU Declaration of Conformity; 6) Meeting and fulfilling the traceability requirements of the products; 7) General IT & labour costs related to it.

3. Dealing with differences in national compliance procedures – 60.50% of respondents agree;
4. Administrative burden of answering requests from market surveillance authorities' documents needed to indicate compliance – 56.70% of respondents agree.

**Figure 10: Share of respondents who think there would be a reduction in the following types of costs, if e-labelling was implemented as an optional approach to a physical label (%), Industry**



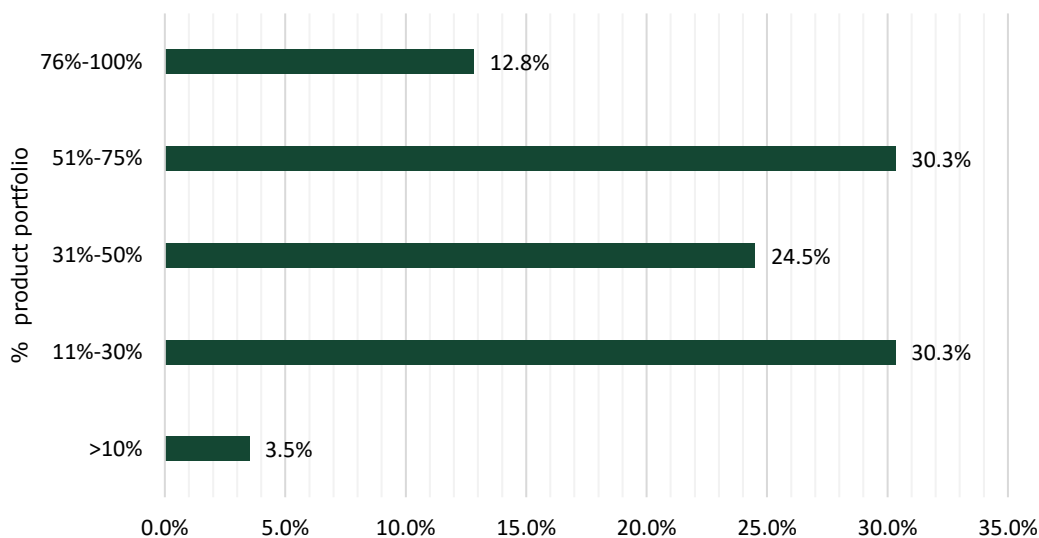
Source: online survey, sample ranging between 36-38 respondents

Other benefits cited by respondents are:

- **Applying a QR code or in-display e-label will avoid multiple compliance marks for products designed for the global market.** The increasing amount of text required for compulsory national labels is very high. An e-label would allow for flexible stock movement across multiple borders, it would be easy to update and would allow for more targeted information to the specific country of sale. Therefore, companies that export in the twelve

countries which already allow e-labelling<sup>35</sup> would save the costs of physically labelling their products, leading to reduced export costs. According to the results of our online survey, **almost 43% of companies export more than 50% of their product portfolio to countries where e-labelling is already allowed.**

**Figure 11: What approximate percentage of your products do you trade with countries that already allow the use of e-labelling?**



Source: online survey, sample: 42 respondents

- Via e-labelling there are **no constraints on the size of the labels**, enabling manufacturers to **convey more information**, even beyond what is required by the applicable regulations. **Some market surveillance authorities, also, commented that the e-label could make consumers more interested in checking the information.** There is a tendency to not read the papers provided alongside electronic devices, but consumers may become more interested in reading compliance information, if they find it easily available on their smartphone screen.
- **E-labelling supports product innovation** because it allows manufacturers to easily adapt labels to new products. As ICT products become ever smaller and diverse in shape to satisfy consumer preferences, physical labels may become a constraint on product design and innovation for smaller size and special shape products;
- **Reduced environmental impacts** due to lower printing costs and wastage;
- E-labels can be modified at very short notice to meet changes in regulatory requirements, **offering real-time compliance information.** In addition, in comparison to a physical label, the e-label would last longer.

<sup>35</sup> i.e. Australia, Canada, China, Ghana, Japan, Malaysia, New Zealand, Singapore, South Africa, South Korea and USA. Since 2017, India and Taiwan also allow e-labelling only.



## 5.2 Costs and benefits to MSAs

Our results show that the proposed e-labelling scheme would not have negative impacts on the work of market surveillance authorities.

### 5.2.1 Costs of e-labelling

From the MSAs' perspective, the introduction of an e-labelling scheme would impose some one-off IT **costs** (i.e. hardware and software purchase/conversion) and related labour costs for the new IT system **and training of existing personnel**. Clearly, these are **one-off costs linked to the adaption to the new system** and it was not possible within this study to produce a quantitative estimate of such costs.

At the same time, **none of the MSAs consulted for this study foresaw that the introduction of an e-labelling scheme would impose significant recurring costs**.

**Table 3: Relevant costs or benefits for MSAs by introducing the e-labelling scheme**

Costs	Rank
Hardware purchase	1 <sup>st</sup>
Training and other personnel-related costs of development and installation	2 <sup>nd</sup>
Software purchase	3 <sup>rd</sup>
Software conversion	4 <sup>th</sup>

Source: interviews, sample: 12 Market Surveillance Authorities

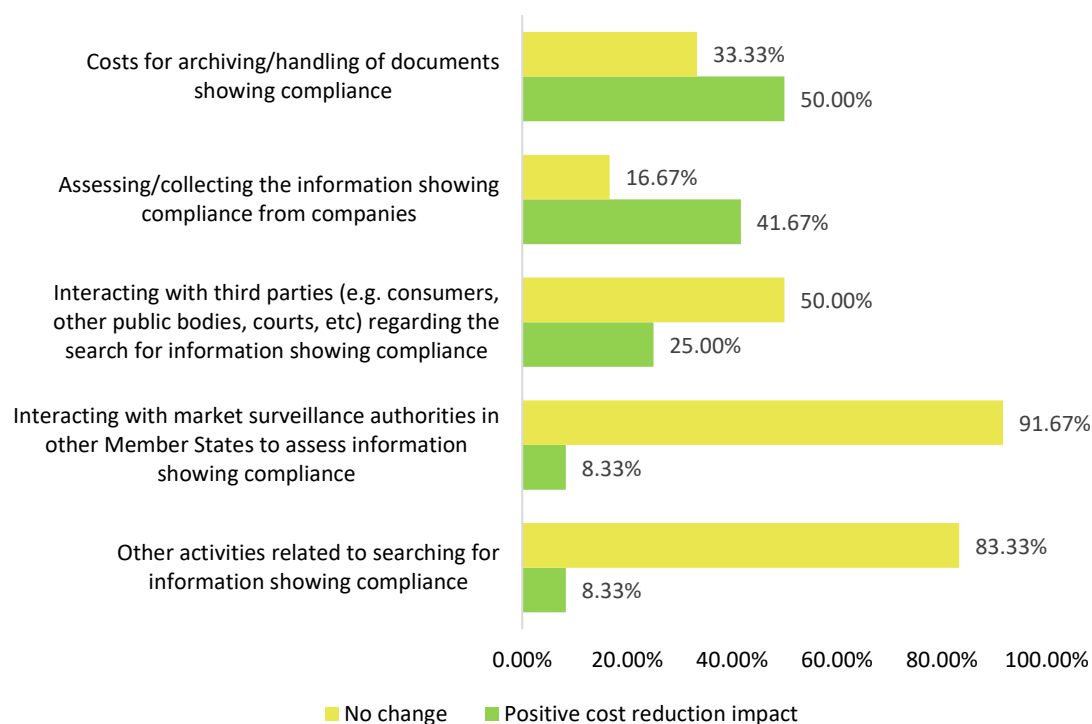
### 5.2.2 Benefits of e-labelling

Furthermore, according to MSA interviews for this research, Market Surveillance Authorities, the proposed e-labelling scheme is expected to generate **a number of benefits**, especially in terms of:

1. **Reducing costs for archiving/handling of documents showing compliance;**
2. **Assessing/collecting the information showing compliance from companies.**

At the same time, most of MSAs don't expect any impact in the other day-to-day activities.

**Figure 12: Share of respondents who think there would be a reduction in the following costs, if e-labelling was implemented as an optional approach to a physical label (%), Market Surveillance Authorities**



Source: interviews, sample: 12 Market Surveillance Authorities

Other often cited benefits were related to the possibility **to improve their operational flexibility** and **activities related to handling information and response to requirements**.

**Table 4: Additional benefits foreseen by Market Surveillance Authorities**

Benefits	Rank
Improvements in operational flexibility	1 <sup>st</sup>
Improvements information handling and response to requirements	2 <sup>nd</sup>
Improved storage and retrieval techniques	3 <sup>rd</sup>
Reduction of resource requirements	3 <sup>rd</sup>
Reduced error rates	4 <sup>th</sup>

Source: interviews, sample: 12 Market Surveillance Authorities

## 5.3 Overall impacts on society

This section provides evidence about the overall impacts of the proposed e-labelling system for society, summing up the results of the two previous sections and highlighting potential impacts on consumers and on the environment.

### 5.3.1 Costs of e-labelling

The total costs for the society can be summarized as the sum of the total costs borne by the main categories of stakeholders impacted by the proposed e-labelling scheme: industry, market surveillance authority and consumers.

As shown in section 5.1.1, **business** perceptions are that **by designing the e-labelling scheme as an optional approach**, the initiative **minimizes any administrative burden/adaptation costs to the industry**. Hence, any one-off or recurring cost are considered **negligible**.

The assessment of **market surveillance authorities** is that the introduction of e-labelling would impose some **one-off costs in terms of IT and training to adapt to the new system**. **No MSA foresaw that the introduction of an e-labelling scheme would impose significant recurring costs** on their market surveillance activities.

Nevertheless, the majority of market surveillance authorities agree that shortly after the introduction of the e-labelling scheme, the number of complaints from consumers would increase as they are not used to the new system. In addition, some pointed out that older people could have more problems to adapt to the new system than the younger one.

**Overall**, although a transition period to adapt to the new system is necessary for all stakeholders, considering the assessments of industry and market surveillance authorities, it is possible to conclude that **the introduction of the e-labelling scheme** (as presented in section 4) **would not impose any significant cost on society**.

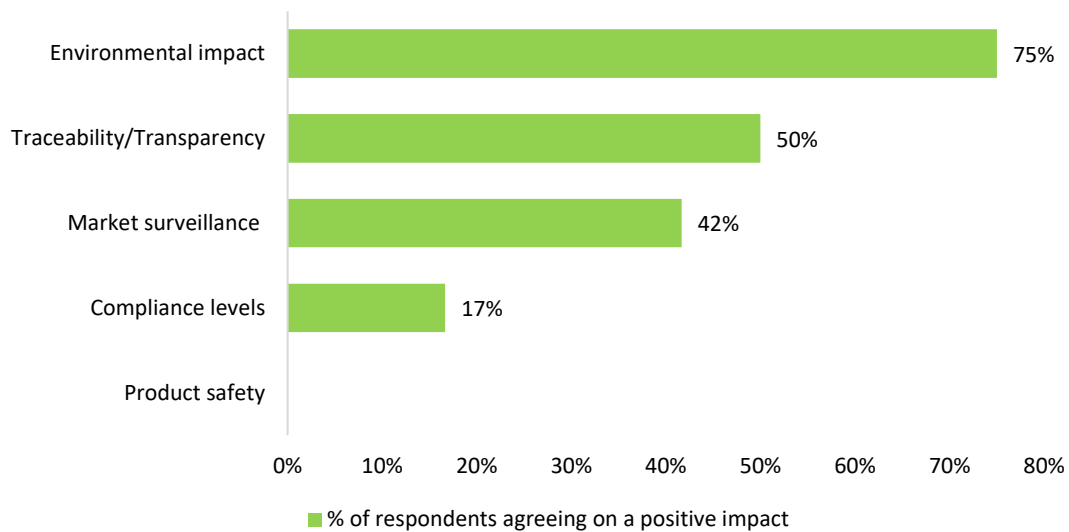
### 5.3.2 Benefits of e-labelling

Figure 13, 14, 15 & 16 show the overall expected impacts on society according to the opinion of market surveillance authorities and industry, respectively.

According to the sample of 12 market surveillance authorities interviewed, it is expected that the e-labelling scheme would have **strongly positive** or **positive impacts** for:

1. **The environment** (75% of respondents agree); and
2. **Traceability/transparency** of the products (50% of the respondents agree).

**Figure 13: Share of respondents who think there would be a positive impact, if e-labelling was implemented as an optional approach to a physical label (%), Market Surveillance Authority**

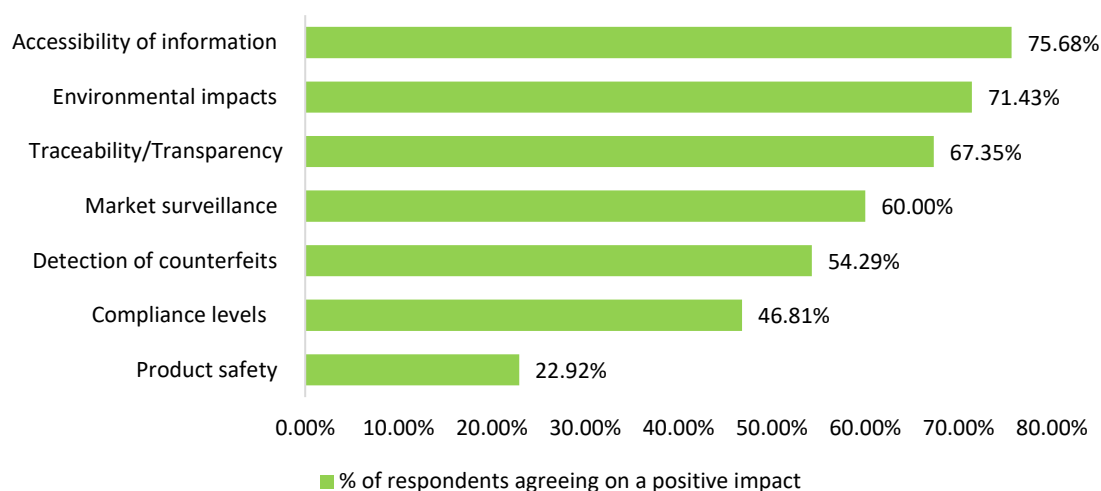


Source: interviews, sample: 12 Market Surveillance Authorities

Industry stakeholders expects that the e-labelling scheme would have **strongly positive** or **positive impacts** for a wider range of applications. In detail:

1. **Accessibility of information** (76% of respondents agree);
2. **Environmental impacts** (72% of respondents agree);
3. **Traceability/transparency** of the products (68% of respondents agree);
4. **Market surveillance** (60% of respondents agree);
5. **Detection of counterfeits** (54% of respondents agree).

**Figure 14: Share of respondents who think there would be a positive impact, if e-labelling was implemented as an optional approach to a physical label (%), Industry**

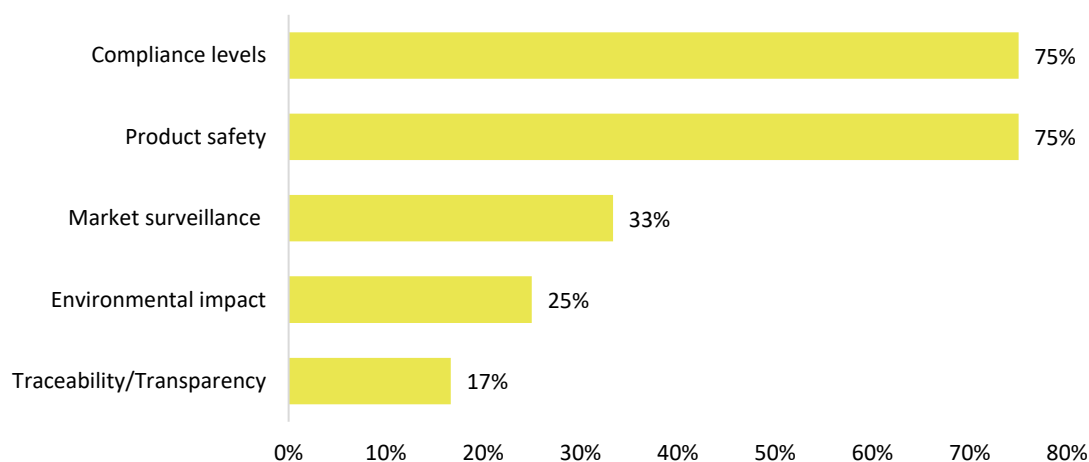


Source: online survey, sample ranging between 36-38 respondents

The results above show that **both categories of stakeholders agree** that the introduction of the e-labelling scheme would have **positive impacts for the environment** due to reduced waste and printing, and **positive impacts in terms of traceability/transparency of the products**.

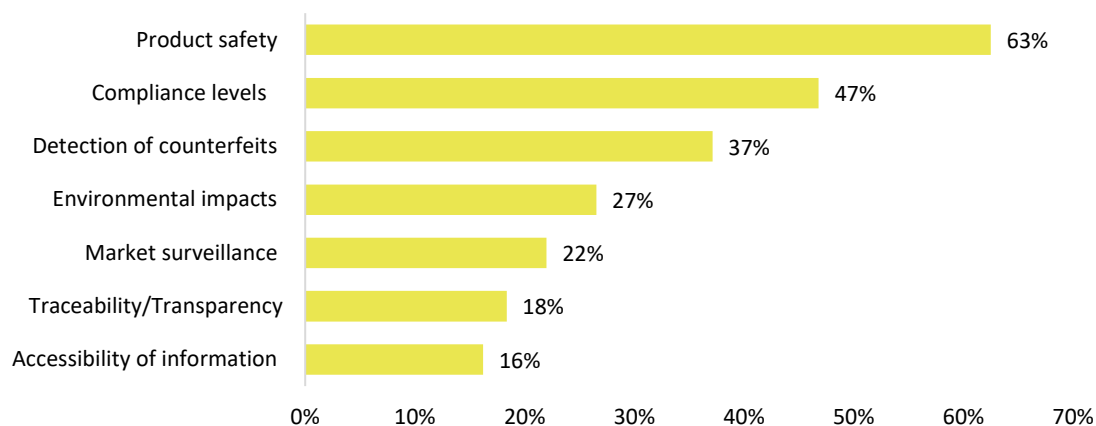
Both categories of stakeholders also tend to agree that e-labelling would have **no effect** in terms of **"compliance of products"** and **"product safety"**.

**Figure 15: Share of respondents who think there would be "no change", if e-labelling was implemented as an optional approach to a physical label (%), Market Surveillance Authority**



Source: interviews, sample: 12 Market Surveillance Authorities

**Figure 16: Share of respondents who think there would be “no change”, if e-labelling was implemented as an optional approach to a physical label (%), Industry**



Source: online survey, sample ranging between 36-38 respondents

Some market surveillance authorities expressed their concerns regarding the impacts in terms of traceability, safety and compliance.

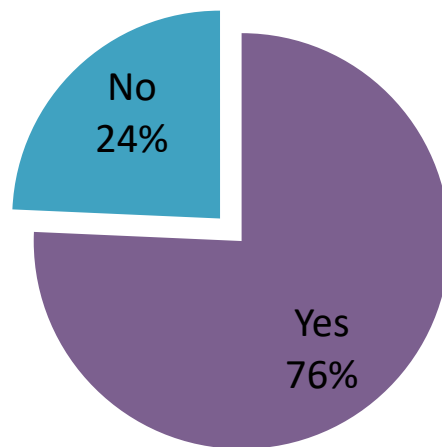
Indeed, some are worried that companies may take advantage of the greater flexibility offered by the e-labelling scheme to avoid their responsibilities or that this flexibility would translate into higher error rates in placing products not authorized in the Single Market (e.g. due to different restrictions of use, frequency bands or transmission power).

Nevertheless, it is recognized that the digitalization of the CE marking, and other proposed information is not sufficient alone to assess the compliance of a product, which can be done only through testing.

Some authorities also expressed their concern about the up-take of the e-labelling scheme, as any potential benefit depends on a widespread adoption among companies.

In this regard, according to the results of our survey, **76% of the respondents would be interested in adopting the e-label if it was allowed.**

**Figure 17: Would you be interested in implementing an e-labelling scheme as an optional approach to a physical label if it was allowed in the EU?**



Source: online survey, sample 37 respondents

## 6 Conclusions

The analysis presented in this report has led to the following conclusions:

- Under the current system, the overall **costs of indicating compliance** for manufacturers of radio- frequency products are significant **at € 303.85 million per year**.
- **More than half of companies believe these costs to be “high” or “very high”** and more than **75% think the introduction of the e-labelling scheme would be an improvement**, compared with only about 4% who think such a system would be worse than the current one.
- The proposed e-labelling scheme is estimated to lead to a **significant 14.28% drop changes in the cost of indicating compliance for companies per year**.
- Further, the introduction of e-labelling would decrease:
  - the costs of updating compliance information for existing products;
  - the costs of dealing with differences in national compliance procedures; and
  - administrative burdens for answering requests from market surveillance authorities’ documents needed to indicate compliance.
- At the same time, **as an optional approach, the e-labelling scheme minimizes any administrative burden/adaptation costs for industry**.

- The introduction of the proposed e-labelling scheme would also be **positive in terms of:**
  - **Innovation**, by overcoming the constraints imposed by physical labels on product design for smaller size and special shape products;
  - **International trade**, because some of the EU's main trading partners already allow the use of e-labels, the digitalization of marks and labels in Europe would translate into cost reductions for EU companies; and
  - **Conveying more information to consumers**, beyond what is required by the applicable EU harmonisation legislation.
- **For market surveillance authorities**, the introduction of e-labelling would impose small one-off costs in terms of IT and training of existing personnel which would be compensated for by reductions in the costs of archiving/handling of documents showing compliance and assessing/collecting the information showing compliance from companies.
- **None of the market surveillance authorities consulted in the study indicated that the introduction of an e-labelling scheme would impose significant recurring costs.**
- In addition, **e-labelling would provide MSAs with an opportunity to improve their operational flexibility and activities related to handling information and response to requirements.**
- Beyond industry and MSAs, the study finds that e-labelling would also help to reduce **environmental impacts** due to reduced paper waste and printing, and it would have a **positive impact in terms of product traceability/transparency**, as compliance information would be easily available and last longer.



## 7 ANNEX 1: Stakeholder list

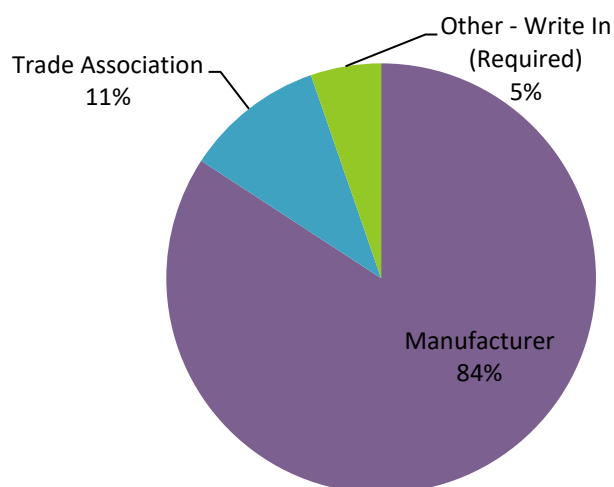
**Table 5: List of stakeholders interviewed**

Affiliation	Country
Dell	Ireland
Siemens	Germany
Federal Ministry for Transport, Innovation and Technology	Austria
Federal Public Service Economy	Belgium
HAKOM	Croatia
FICORA	Finland
Bundesnetzagentur	Germany
National Telecommunications and Post Commission	Greece
Office of Economic Affairs	Liechtenstein
Communications Regulatory Authority of The Republic of Lithuania	Lithuania
Radiocommunications Agency Netherlands	Netherlands
Slovak Trade Inspection	Slovakia
Ministry of Economic development and Technology	Slovenia
Ministry of Economy and Competitiveness	Spain

*The interviewees' details have been anonymised.*

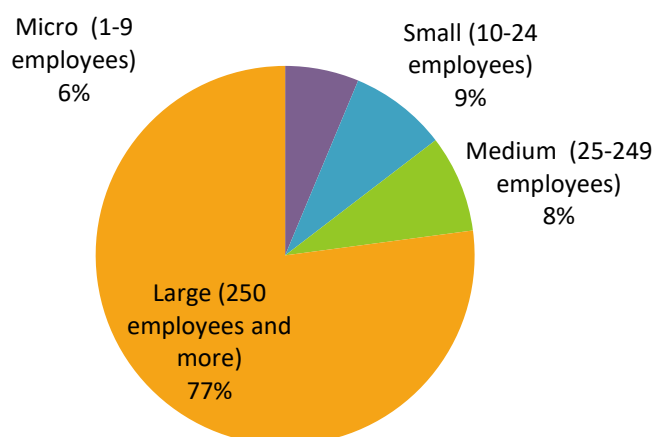
## 8 ANNEX 2: Online survey

**Figure 18: Is your organisation a...**



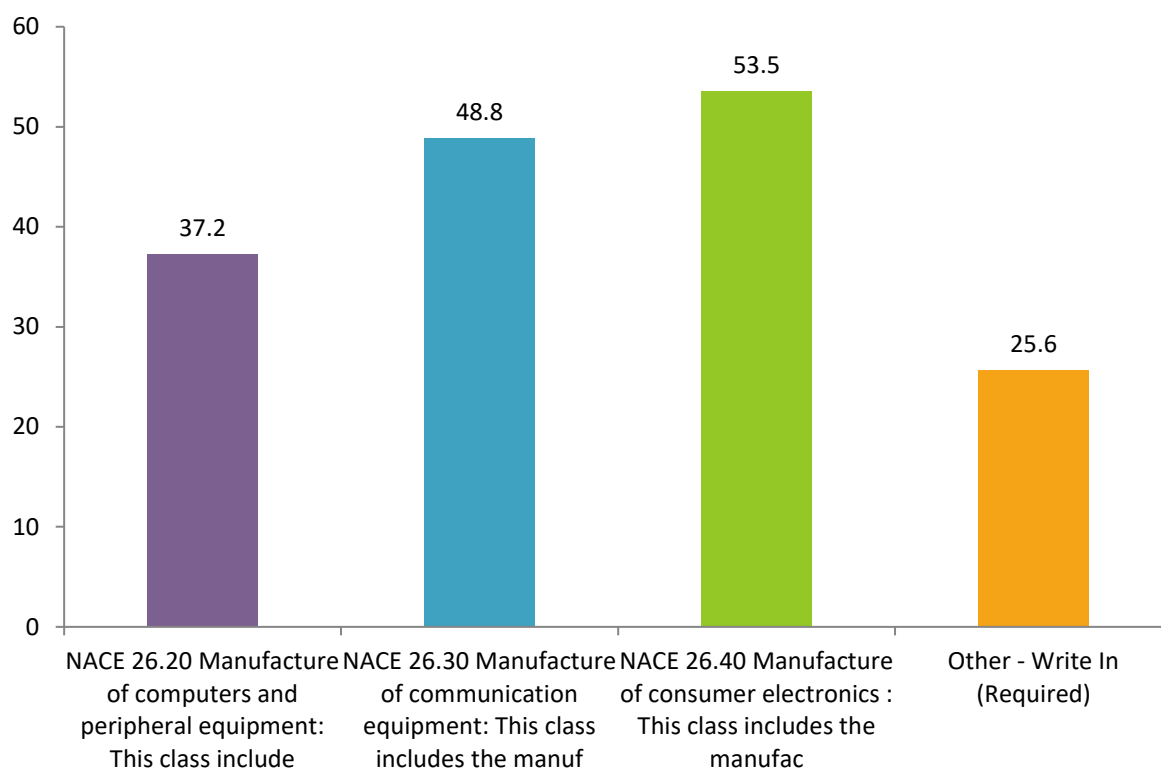
Value	Percent	Count
Manufacturer	84.2%	48
Trade Association	10.5%	6
Other - Write In (Required)	5.3%	3
	<b>Totals</b>	<b>57</b>

**Figure 19: How large is your organisation?**



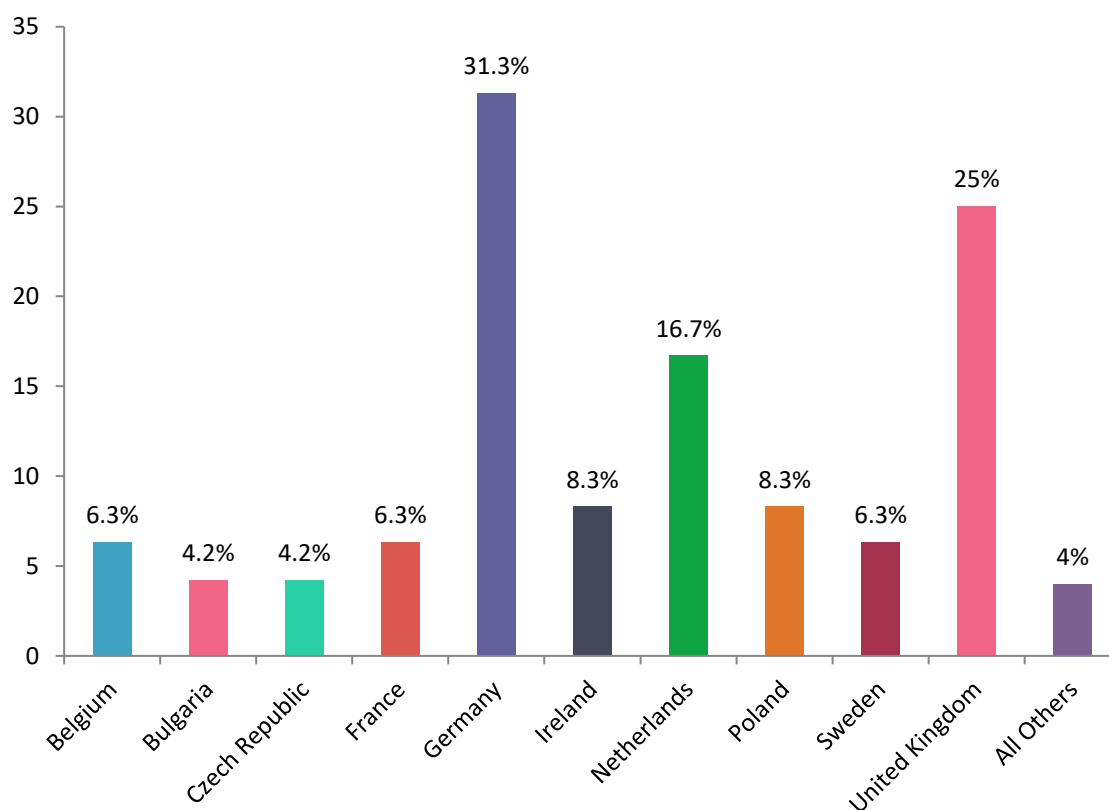
Value	Percent	Count
Micro (1-9 employees)	6.3%	3
Small (10-24 employees)	8.3%	4
Medium (25-249 employees)	8.3%	4
Large (250 employees and more)	77.1%	37
	<b>Totals</b>	<b>48</b>

**Figure 20: In which industry does your organisation operate?**



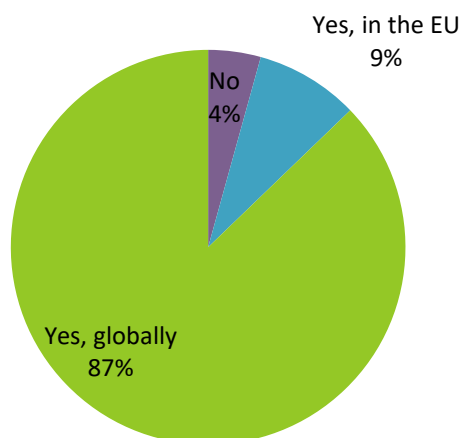
Value	Percent	Count
NACE 26.20 Manufacture of computers and peripheral equipment: This class includes the manufacture and/or assembly of electronic computers, such as mainframes, desktop computers, laptops and computer servers; and computer peripheral equipment, such as storage devices and input/output devices (printers, monitors, keyboards).	37.2%	16
NACE 26.30 Manufacture of communication equipment: This class includes the manufacture of telephone and data communications equipment used to move signals electronically over wires or through the air such as radio and television broadcast and wireless communications equipment.	48.8%	21
NACE 26.40 Manufacture of consumer electronics : This class includes the manufacture of electronic audio and video equipment for home entertainment, motor vehicle, public address systems and musical instrument amplification.	53.5%	23
Other - Write In (Required)	25.6%	11

**Figure 21: Where is your headquarters or main operational site in Europe?**



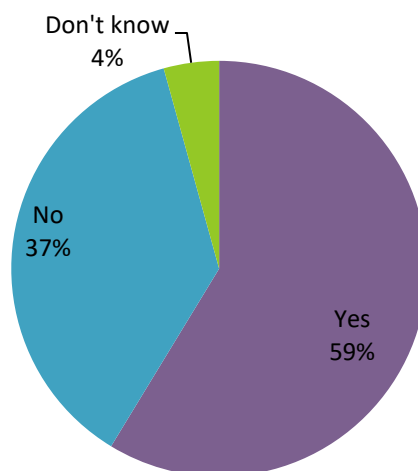
Value	Percent	Count
Belgium	6.3%	3
Bulgaria	4.2%	2
Czech Republic	4.2%	2
Denmark	2.1%	1
Estonia	2.1%	1
France	6.3%	3
Germany	31.3%	15
Ireland	8.3%	4
Luxembourg	2.1%	1
Malta	2.1%	1
Netherlands	16.7%	8
Poland	8.3%	4
Sweden	6.3%	3
United Kingdom	25.0%	12

**Figure 22: Does your organisation sell goods/services in any other countries?**



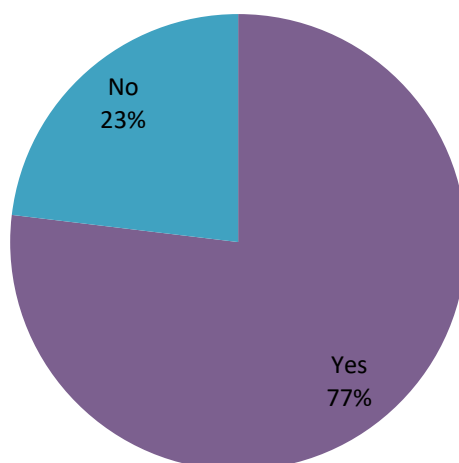
Value	Percent	Count
No	4.3%	2
Yes, in the EU	8.5%	4
Yes, globally	87.2%	41
	<b>Totals</b>	<b>47</b>

**Figure 23: Does your organisation belong to a multinational group?**



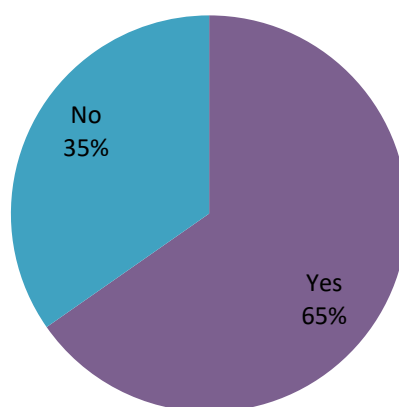
Value	Percent	Count
Yes	58.7%	27
No	37.0%	17
Don't know	4.3%	2
	<b>Totals</b>	<b>46</b>

**Figure 24: Do you produce electronic devices with an integral screen that could display information digitally on the screen or could be connected to a screen rather than on a label affixed to the device?**



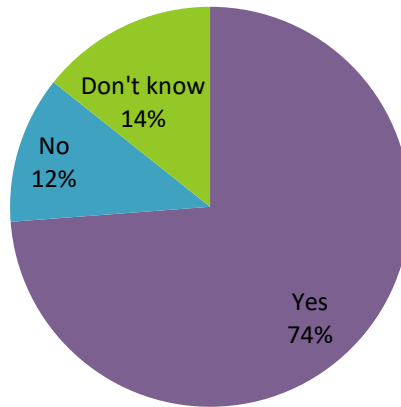
Value	Percent	Count
Yes	76.9%	40
No	23.1%	12
	<b>Totals</b>	<b>52</b>

**Figure 25: Do you produce electronic devices without an integral screen but that can be connected to a screen and display information electronically rather than on a label affixed to the device?**



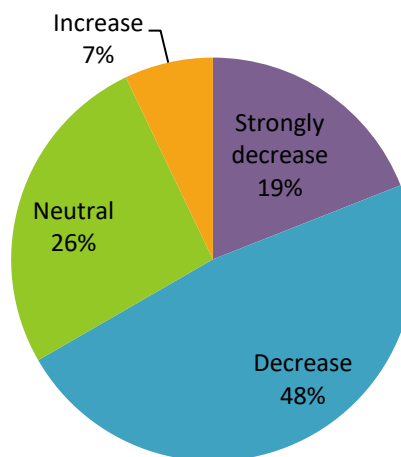
Value	Percent	Count
Yes	65.3%	32
No	34.7%	17
	<b>Totals</b>	<b>49</b>

**Figure 26: Should you produce electronic devices/equipment without an integral screen and that cannot be connected to an external screen, do you think indicating compliance electronically using a QR code or other machine-readable code (surface labelling) would be a suitable solution for these products?**



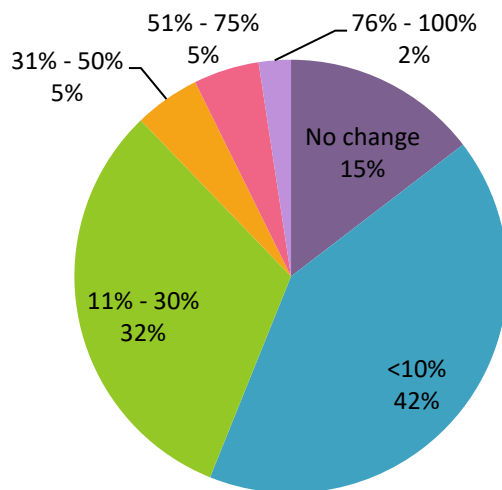
Value	Percent	Count
Yes	73.8%	31
No	11.9%	5
Don't know	14.3%	6
	<b>Totals</b>	<b>42</b>

**Figure 27: Do you think that an e-labelling scheme as an optional approach to a physical label would change your overall costs of indicating compliance (i.e. providing labels/marketing/supporting information and etching labels)?**



Source: online survey, sample: 42 respondents

**Figure 28: Please indicate, in percentage terms, by how much your total costs of indicating compliance (i.e. providing labels/marketing/supporting information and etching labels) would change if you could use e-labelling as an optional approach to a physical label in Europe?**



Source: online survey, sample: 42 respondents



## 9 ANNEX 3: List of literature

**Table 6: List of literature**

- Baltic Legal Solution (2014), *Study of the system of institutions enforcing the market surveillance policy in Lithuania*
- European Commission (2017), *Impact assessment for the new Compliance and Enforcement regulation*. Available at: <https://ec.europa.eu/docsroom/documents/26976>
- CSES & Panteia (2014), *Evaluation of the Internal Market Legislation for Industrial Products*. Available at: <http://ec.europa.eu/smart-regulation/evaluation/search/download.do?documentId=9966151> ;
- ITIF (2017), *E-Labeling and the ICT Sector: An Overview*. Available at: <http://www2.itif.org/2017-apec-presentation.pdf>
- Statista (2018), *Consumer Electronics Report 2018 – Computing*
- Statista (2018), *Consumer Electronics Report 2018 – Telephony*
- Statista (2018), *Consumer Electronics Report 2018 – TV, Radio and Multimedia*
- Technopolis & EY (2017), *Ex-post evaluation of the application of the market surveillance provisions of Regulation (EC) No 765/2008*. Available at: <https://ec.europa.eu/docsroom/documents/26963/attachments/1/translations/en/renditions/pdf>