JOINT INDUSTRY STATEMENT ON PARTS REPLACEABILITY AND AVAILABILITY

22 July 2022

Executive Summary

The undersigned joint group of associations support the European Commission's ambition to "make sustainable products the norm". By bringing a common approach to products in the Single Market, the proposal for a Regulation on Ecodesign for Sustainable Products (ESPR) has the potential to boost the material efficiency of products sold in the EU and to allow consumers to make smart environmental choices. The electrical and electronic products industry is aligned with the Commission's objective to promote durability of products and is committed to offer high-quality repairs to consumers.

We would like to share our insights on how to achieve the European Commission's objectives of ensuring longer product lifetimes without endangering the functionality and reliability of devices. Through consideration of the case study on Smartphones and tablets, and in order to deliver value and functionality to customers in the most environmentally friendly way possible we recommend to:

- focus on replaceability requirements for parts that fail most often,
- set an optimized duration for spare parts availability,
- focus on reasonable lead times for part availability.

Please find below detailed explanations on these recommendations.

Discussion

Along the lines of the Circular Economy Action Plan and of the ESPR, our industry is striving to design products that are durable and can be repaired. Two important factors determine product repairability:

- the identification of parts that need to be replaceable due to their significant failure rates,
- the minimum time period these parts need to remain available.

Both the EU CENELEC standard establishing a general method to assess the ability to repair energy-related products[1] and the European Commission's Joint Research Center (JRC)[2] guidance for the assessment of the Material Efficiency of Smartphones recommend that not all parts in a product shall be replaceable but only those with the highest failure likelihood.

The Ellen MacArthur Foundation[3] pointed out already in 2018 that "*there is no silver bullet in terms of design for circularity. […Companies ought to] select a circular design strategy that fits the business model and the wider system in which the device operates. These strategies can range from 'designing for durability' to 'designing for adaptability and repairability'*." The JRC furthermore acknowledges that "*trade-offs between reliability and repairability need to be considered*".

As an example, improving product reliability normally involves the integration of multiple components into one or the use of gluing and sealing technologies in order to improve resistance to shock, water and dust. Facilitating consumer repairability, on another hand, requires easy opening of the enclosure and special design of parts so that they can be safely handled by a layman. Consequently, many companies in our sector have chosen a path with the best of both worlds – reliability for the customer while still enabling repairability by professionals.

Concerns

- **Parts Replaceability**
  We are concerned that an excessively detailed prescription of which individual parts would need to be replaceable will have negative effects on the reliability of products. The integration of discrete parts into a higher-level component is an important means to improve system reliability, material and space efficiency, and miniaturization. This increasingly used design approach reduces the need for connectors, flexible printed circuit boards. The product has therefore fewer potential points of failure. In addition, integration of parts allows for more efficient designs, which in turn often have a smaller carbon footprint to manufacture.

  The integration of parts also delivers fundamental new product features ranging from superior energy efficiency to leading edge product performance and unprecedented product functionalities. A requirement to replace parts with low failure rates risks

[1] EN45554 (General method for the assessment of the ability to repair, reuse and upgrade energy-related products) was written by CEN/CENELEC based on a mandate from the EU Commission to facilitate assessment of the ability to repair, reuse and upgrade energy-related products. In chapter 5.2.1 it provides that: "*Parts with a high average occurrence of failure shall be added to the list of priority parts for repair, taking into account their relevance to the functionality of the product. Data shall be gathered to assess the likelihood that parts fail, such that replacement or repair are necessary* "

[2] The European Commission's Joint Research Center (JRC) in their 2020 Smartphone Study acknowledged "*actions that can potentially have a positive influence with respect to a specific material efficiency aspect could have negative consequences for other aspects*" (p.90).(…) *"Possible measures to improve the material efficiency of products should not be seen as a pool of separate alternatives but rather as a set of interconnected options that can affect and/or be influenced by other aspects"*.

[3] "Circular Consumer Electronics: an initial exploration" (2018)

inhibiting the industry from introducing breakthrough innovations comparable in scale to the "system on a chip architecture"[4], with limited environmental benefit.

- **Availability of Spare Parts**
  We are concerned about striking the right balance between availability of parts in terms of years and negative environmental and economic effects if parts need to be produced and stored that might never be used. A potential overproduction, subsequent warehousing and destruction of spare parts will naturally result in wasted resources, reduced material efficiency and negative economic value ultimately resulting in higher costs for the consumer.

  Furthermore, we recommend considering reasonable lead times for the delivery of spare parts. Manufacturers have limited control over delivery times and potential, unforeseen issues in the supply chain can impact this. Manufacturers can only influence the time it takes to dispatch a part, not the overall delivery time. This is also impacted by different logistics in different countries.

Case study on the draft smartphone and tablet regulation

For the product category of smartphones and tablets, evidence presented by stakeholders shows that displays and batteries are by far the most relevant parts for product repair. In contrast, parts such as microphones, speakers, buttons and connectors which have been proven to have very low failure rates should not be required to be replaceable.

Replacement of these parts together with a higher-level component gives product designers the ability to deal with trade-offs between designing for reliability and repairability of smartphones and tablets. Alternatively, to the current, reliability agnostic approach, reliability-based exemptions from requiring replaceability of parts could be a regulatory solution that allows better consideration of the beforementioned trade-offs between reliability and repairability.

Last but not least, adapting the design of complex and highly integrated products such as smartphones and tablets requires at least 24 months transition time given typical industry design cycles of 2-3 years. Short-cutting the transition period, especially at a time where global logistics are constrained, will likely lead to unavailability of a wide range of products that customers rely upon in their day-to-day lives.

Conclusion

Our organizations urge EU policymakers to consider the following considerations as they progress with considering design measures for the electrical and electronic industry:

- **Focus on replaceability requirements for parts that fail most often**
  (a) Making too many parts discretely replaceable can have a negative impact on product reliability, increase usage of materials and carbon footprint. It might also have a negative impact on future product innovations, which allow for improved energy efficiency, new functionalities and performance improvements at the same time. We strongly recommend the European Commission to base selection of replaceable parts on sufficient evidence and consider failure rate data provided by industry as well as the safety risk data when consumers replace parts.

[4] Innovativ system on a chip architecture will typically integrate a central processing unit, graphics and memory interfaces, hard-disk and USB connectivity, random-access and read-only memories and secondary storage and/or their controllers on a single circuit die, whereas a conventional motherboard would connect these modules as discrete components.

(b) Providing reliability-based exemptions from replaceability of parts could be a good solution to ensure better consideration of the beforementioned trade-offs between reliability and repairability.

- **Set an optimized duration for spare parts availability**
  Environmental and economic effects need to be weighed bearing in mind the realistic demand for spare parts after a manufacturer stops selling a specific product.

- **Focus on reasonable lead times for part availability**
  Manufacturers have limited control over delivery times and potential, unforeseen issues in the supply chain can impact this.

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Supporting associations:

ABINEE: Associação Brasileira da Indústria Elétrica e Eletrônica (Brazilian Electric and Electronic Industry Association)
AFNUM: Alliance Française des Industries du Numérique (France)
Agefe: Associação Empresarial dos Setores Elétrico, Eletrodoméstico, Eletrónico e das Tecnologias da Informação e Comunicação (Portugal)
Agoria (Belgium)
AIIA: Australian Information Industry Association
AMETIC: Association of Electronics, Information and Communication Technologies, Telecommunication and Digital Content Companies (Spain)
AMTA: Australian Mobile Telecommunications Association
ANITEC – ASSINFORM: Associazione Italiana per l'Information and Communication Technology (Italy)
Bitkom: Branchenverband der deutschen Informations- und Telekommunikationsindustrie (Germany)
CANIETI: Mexican Chamber for the Electronics, Telecomm and Information Technology Industries
CCCME: China Chamber of Commerce for Import and Export of Machinery and Electronic Products
CCIT: Colombian Chamber of Informatics and Telecoms
Dansk Erhverv: Danish Chamber of Commerce
Digital Poland Association
DIGITALEUROPE
ECFIC: Executive Committee of Foreign Investment Companies (China)
Electronics Product Stewardship Canada
ElektronikBranschen (Sweden)
Fachverband der Elektro- und Elektronikindustrie (Austria)
IT-Branchen (Denmark)
ITI: Information Technology Industry Council
JEITA: Japan Electronics and Information Technology Industries Association
NLdigital: Trade Association for IST and Telecom Companies in the Netherlands
KEA : Korean Electronics Association
PIIT: Polska Izba Informatyki i Telekomunikacji (Poland)
Secimavi: Syndicat des Entreprises de Commerce International de Matériel Audio, Vidéo et Informatique (France)
Swico: Der Verband der Digitalisierer (Switzerland)
Technology Ireland/IBEC: Irish Business and Employers' Confederation
TechSverige (Sweden)
ZVEI: Die Elektro- und Digitalindustrie (Germany)

For more information please contact:

Giorgia Murgia, Officer for Sustainability Policy at DIGITALEUROPE
giorgia.murgia@digitaleurope.org