1 September 2021

SUPPLEMENTAL COMMENTS IN RESPONSE TO THE EUROPEAN COMMISSION'S "PUBLIC CONSULTATION ON A SET OF EUROPEAN DIGITAL PRINCIPLES" BY THE ASSOCIATION FOR COMPUTING MACHINERY EUROPE TECHNOLOGY POLICY COMMITTEE

The Association for Computing Machinery (ACM) is the world's largest and longest established professional society of individuals involved in all aspects of computing. It annually bestows the ACM A.M. Turing Award, often popularly referred to as the "Nobel Prize of computing." ACM's Europe Technology Policy Committee (Europe TPC) is charged with and committed to providing technical information to policymakers and the general public in the service of sound public policy formation. ACM and Europe TPC are non-profit and non-lobbying organizations.

ACM's Europe Technology Policy Committee stands ready to leverage the expertise of its thousands of European members to assist the European Commission in its further consideration of Digital Principles, or otherwise with respect to technical matters implicating any aspect of computing and its societal impacts. To request such technical, apolitical input please contact ACM's Director of Global Policy & Public Affairs, Adam Eisgrau, at acmpo@acm.org or +1 202.580.6555.

In addition to its responses to the questionnaire in the above-captioned proceeding, Europe TPC offers the following comments[1] to each of these specific consultation sections:

1.1 Universal access to internet services

Europe TPC emphatically concurs with the Commission that universal access to fast and reliable internet services for all individuals is of paramount importance to the development and maintenance of an economically successful, inclusive, and socially just European Union. To that end, the Committee urges the Commission to develop a comprehensive understanding of what level of service and online functionality constitute minimally acceptable "access" and then codify a comprehensive and detailed definition of these key concepts.

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[1] The principal author of this document for ACM's Europe Technology Policy Committee is Alejandro Saucedo, Engineering Director at Seldon Technologies and Chief Scientist at Institute for Ethical AI & Machine Learning. Others contributing were: Chris Hankin, Europe TPC Chair and Fellow of the Institute for Security Science and Technology and Professor of Computing Science at Imperial College, London; Bran Knowles, Senior Lecturer in Data Science at Lancaster University; Andrew McGettrick, Professor Emeritus of Computer and Information Sciences, University of Strathclyde; Enrico Nardelli, Professor in Informatics at Università di Roma; Gerhard Schimpf, Senior Manager at SMF Management Consulting - Pforzheim; and Gurkan Solmaz, Senior Researcher at NEC Laboratories Europe. (*NOTE: All affiliations above are listed for identification purposes only*.)

As the Commission observes in the context of individuals' access to public services and administration in Section 1.3 of the consultation, "access" must connote and permit a robust online experience:

> "Obstacles have to be reduced and diverse user groups, particularly vulnerable groups should be consulted in the design of such services (for example, digital solutions must be designed using state of the art standards to make them accessible for persons with disabilities)."

The Committee underscores that all vulnerable groups, including those who face economic rather than physical or cognitive challenges must be enabled to take full advantage of digital technology, markets, as well as e-government services.

Accordingly, the Committee recommends that the Commission's ultimate definition of "access" (and/or regulations on how best to equitably afford it to all European Union residents) specifically:

- reference contemporaneously developed minimum technical requirements to apply at both application and infrastructure levels;
- apply at minimum to select, Commission-identified "critical services," such as those outlined in the description of section 1.1 of this consultation including e-justice, e-government, online learning, and financial services;
- address other practical considerations commonly encountered in online environments, including account "lockout" solutions and software "bug" remediation; and
- mandate that the security of access to critical services must be engineered into products and technologies from their inception (*i.e.*, "secure-by-design").

1.2 Universal digital education and skills for people to take an active part in society and in democratic processes

The Committee indicates in its response to this section of the Commission's questionnaire that it is "very important" that "[e]veryone should be able to be empowered through education to navigate the digital (media) environment in a safe, critical and confident manner."

As it did in response to another recent Commission consultation, Europe TPC strongly urges the Commission in this proceeding to view the academic discipline of Informatics as an important foundational discipline to be taught from early years, recognising it to be as essential a discipline as Mathematics. The Committee also believes that Informatics should be integrated into the teaching of all other applicable disciplines. (See: *https://www.acm.org/binaries/content/assets/public-policy/europe-tpc-comments-ai-consultation.pdf*)

Europe TPC thus calls on the Commission to formally define the importance of embracing robust, universal Informatics education – and the importance of designing, adopting, and deploying such curricula at every educational level throughout Europe – as a foundational and essential Digital Principle of the European Union.

1.3 Accessible and human-centric digital public services and administration

As outlined above with respect to Section 1.1 of the consultation, it is also critical in the context of public services and administration that the Commission both: 1) develop a comprehensive understanding and definition of the requirements with which privately or governmentally delivered internet services must comply in order to provide access that may legitimately be regarded as "meaningful and complete;" and 2) at minimum, identify critical services to which codified definitions of access and requirements for providing it would apply at both application and infrastructure levels of the services themselves (as also suggested in Section 1.1, above). The Committee also notes that any such definition and regulatory scheme adopted should be sufficiently flexible and "updateable" so as not to disincentivize or impede the formation and growth of innovative technology start-ups and other small and medium-sized enterprises (SMEs) seeking to become key parts of the "critical services" ecosystem.

1.4 Access to digital health services

Given the large-scale rollout of digital services infrastructure required to facilitate access to digital health services throughout the Union, it will be extremely important to assure that all individuals' healthcare data is kept private and secure in a transparent manner. Principles and regulation adopted to accomplish this should, in the Committee's view, also address whether and how such data may be accessed for analytical purposes. Clear standards and law in this context will be especially necessary when and if third party analysts or researchers are afforded access to patients' underlying data, even if it is anonymised and/or aggregated.

Further, given the large number of professionals that will be required to offer these online services, it will be important to ensure that relevant training programmes and initiatives are created for both new entrants to the field and seasoned professionals.

For additional input, the Committee also commends to the Commission's attention its recent response in the European Health Data Space consultation. (See: *https://www.acm.org/binaries/content/assets/public-policy/europe-tpc-ehds-consultation-comments.pdf*).

1.5 An open, secure and trusted online environment

As noted above, and the GDPR has codified, the protection of individuals' privacy in the online environment is critical. From a technical perspective, the Committee affirms that securely encrypted connections will continue to be essential to avoid potential foreseeable security exploits (such as "man-in-the-middle" attacks), as well as yet unidentified threats that must be mitigated in the future.

Further, as the online environment becomes increasingly defined by artificial intelligence driven systems (whether through machine learning, robotic-process-automation systems, or other means), individuals' privacy and security must be safeguarded, at minimum, by: 1) requiring that such AI systems include relevant human-in-the-loop touchpoints to minimize false positives and/or false negative results; and 2) ensuring that undesired biases within these automated models and systems are eliminated in the system design stage and quickly remediated when later found to be operative.

1.6 Protecting and empowering children and young people in the online space

The Committee considers it critical that comprehensive technical guidelines be formulated to address the risks involved when autonomous systems (*e.g.*, artificial intelligence, machine learning, robotic process automation) are employed in services the end users of which are children.

1.7 A European digital identity

The Committee believes that it would be valuable for the Commission to facilitate the development of a digital identity for European Union citizens and residents and concurs that it would foster the interoperability of services. It also notes, however, that it will be essential to ensure user privacy, particularly by limiting the amount of information shared with authentication systems. In cases where authentication requires the provision of more than such basic data, users must be given clear information about how that data will be used, shared, and/or stored and clear limits on those activities must be placed on the controllers of the data. The role of digital signatures and verification methods also should be actively explored.

1.8 Access to digital devices, systems and services that respect the climate and environment

The Committee has indicated in its questionnaire response that "access to digital devices, systems and services that respect the climate and environment" is very important. In practical terms, Europe TPC urges the Commission to affirm in its Digital Principles that such "respect" can, by definition, only be provided by devices, systems, and services whose carbon footprints can be and actually are accurately measured from their design through their manufacture or deployment and extending to their supply chains. Further, consistent with its comments on the EU Climate Ambition for 2030, the Committee also urges the Commission to define "respect" of the climate and environment to include: 1) minimization of both energy consumption and greenhouse gas emissions; and 2) full compliance with such new consumption and emissions standards or law as the Commission may adopt to achieve its goal of net zero emissions in the Information & Communications (ICT) sector of the European Union's economy by mid-century. (See: *https://www.acm.org/binaries/content/assets/public-policy/europe-tpc-green-deal-comments.pdf*).

1.9 Ethical principles for human-centric algorithms

The Committee welcomes the proposal to develop ethical principles for human-centric algorithms and, in support of that effort, urges the Commission to consider recent comments of the Europe TPC in response to the Commission's just-closed AI Regulation consultation. (See: *https://www.acm.org/binaries/content/assets/public-policy/europe-tpc-comments-ai-consultation.pdf*). Many of the points made therein also are germane to this section of this proceeding, as are two key documents highlighted in the AI submission: a Statement on Algorithmic Transparency and Accountability and a white paper on Automated Decision Making. Finally, we also ask that the Commission "borrow," as appropriate, from the long-established and recently revised ACM Code of Ethics and Professional Conduct. Finally, Europe TPC notes as a technical matter that the phrase "algorithmic systems" used in the questionnaire and consultation documents by the Commission is both counterproductively overbroad and inaccurate. Nor is it generally used in the computing community. The Committee thus respectfully suggests substituting "digital systems" for "algorithmic systems."