

Contributor names and short CVs:

Dr Vasilis Tountopoulos is the Deputy Head and responsible for the Business Development in the ATC Innovation Lab. He received the diploma in Electrical and Computer Engineering from the University of Patras in 2000, and the PhD degree in Electrical and Computer Engineering from the National Technical University of Athens (NTUA) in 2005. He has been involved in EU R&D and National funded projects in ATC and, previously, as a research associate, in the Telecommunications Systems and Computer Networks Laboratories of the ICCS/NTUA. His research interests include semantic Web, interoperability, secure distributed information systems, mobile technologies and performance evaluation. Dr. Tountopoulos is a member of the Technical Chamber of Greece.

Type of the presentation proposed:

In-use contribution

Title of the presentation:

Protecting profiling data in cross-domain cloud application scenarios

Summary of the presentation (100 words):

The use of cloud computing is restricted from its own versatility in securing the mass information made available in the Internet. In that context, this presentation focuses on the lack of appropriate mechanisms to support privacy and protection in linked data, across cloud service chains. It, also, highlights the need for implementing a framework towards the efficient data stewardship in the cloud. This framework adopts best practices to elaborate on the responsibilities of cloud roles in the provision of linked data and show the roadmap for making involved organisations being accountable on how linked profiling data is eventually governed.

Extended abstract of the presentation (1 - 4 pages in 11pt A4 format):

The use of cloud computing has emerged as a promising technology pillar to drive innovation and leverage business development in various sectorial applications. Large-scale industries and SMEs seek for migrating their business in the cloud trying to minimise operational costs and invest on state-of-the-art technologies. ICT companies take the opportunity to enhance their solutions and offer personalised scalable cloud services, taking advantage of big data being available on the Web. Such data include open public information, as well as personal and corporate data, which are stored in distributed database systems and are consumed from a variety of business applications. Modern information services exploit the user profiles

dynamically built by the users in many distributed applications, like Facebook, twitter and Instagram, to deliver personalised access to information, advertisement and interactive services.

However, the lack of customers' trust on the proliferation of their personal data in the cloud and other distributed platforms and the growing complexity of the regulatory framework raise questions on the effective handling of such data, especially when they are linked to interface with multiple Web application environments. As a result, ICT innovation and subsequently the global economy face two main barriers: the uncertainty with respect to the legal terms for the manipulation and linking of profiling data and the evolving concerns on who is accessing this information in cloud-based personalised service provisioning. These barriers have a direct impact on the support of multi-disciplinary data intensive business use cases and set the cloud and future Internet ecosystems at the risk of rejection.

In that respect, this presentation introduces an accountability-based approach for the protection of personal linked data, when they are used in the cloud service and application provisioning ecosystems. The presentation elaborates on the concept of accountability, as it is developed in the FP7 EU-funded A4Cloud project¹, through an analysis of the different dimensions and perspectives for making cloud stakeholders accountable on the use of linked personal and profiling information. It will, also, demonstrate how the provision of linked personal data in cloud service ecosystems is subject to data protection rules and organisational policies, depending on the context of the envisaged application domain.

As a central part of the presentation, it will focus on the challenges arising from the need to develop a sustainable accountability framework for the protection of linked data in cloud paradigms. In such cases, different types of interactions can be identified when governing the stewardship of linked data in the cloud. For each type of interaction, specific obligations can be identified with respect to how cloud personal and profiling linked data are accessed, by whom and for which purpose. The problem evolves to more complicated scenarios, as responsibilities are transferred in cloud service chains, with subsequent impact to remediation and liability actions, in case of violation of linked data access policies.

Towards this direction, the presentation will consider the restrictions in the current regulatory environment and propose how accountability can be built around technical, legal and socio-economic perspectives to develop a set of standard commercial terms and conditions to govern the stewardship of personal linked data in the cloud.

¹ www.a4cloud.eu

Furthermore, the presentation will be allocated to exhibit the main steps for an organisation of either size to demonstrate the maturity over being accountable. To this end, it will provide examples of how cloud service providers realise the attributes on which accountability can be monitored and checked over business practices, involving the exploitation of profiling and other personal linked data of cloud users. These examples will relate the accountability attributes to measurable techniques that offer meaningful insight over the support of privacy and data protection along the design, deployment and operation of complex cloud service chains.