Public services should be functional, cost-efficient, and tailored to citizens needs. Opinion mining, simulation, and deliberation on the Web can support the decision process of public administrations for design and delivery of public services. Together with twelve partners, KIT scientists are working on the use of the Internet to enhance the collaboration and participation of citizens. The EU funds the COCKPIT project with a total of 2.5 million euros under the 7th Framework Programme.

The COCKPIT project (Citizens Collaboration and Co-creation in Public Service Delivery) aims at improving services of public administrations from the organizational, technical, and practical point of view jointly with the citizens. For this purpose, citizen opinions are automatically mined from shared sources of the social Web. Subsequently, they are integrated in the development of public services. Finally, interested citizens evaluate service projects via a Web-based deliberation platform.

“Public administrations on the local, national, and international level today are forced to shift the delivery of their services to the Web while acting under cost pressure. They need to provide the best possible service within the limits of a tight budget,” explains Dr. Christian Zirpins, Project Leader in the eOrganisation Research Group of Professor Stefan Tai at the Karlsruhe Service Research Institute (KSRI) and the Institute for Applied Information Science and Formal Description Methods (AIFB) of KIT.
To intensify the collaboration between citizens and public institutions, the COCKPIT project uses Web-based social media of the so-called Web 2.0. Via blogs, newsfeeds, and communities, the opinions and wishes of citizens as regards public services shall be acquired and discussed. “Governments can leverage the public discourse of citizens on the Internet in order to develop better services,” explains Zirpins. During IT-supported opinion analysis, the quantity of the data available plays an important role. The more inputs in Web 2.0 media can be analyzed, the more representative is the result.

The novel COCKPIT governance model for design, implementation, and delivery of public services builds on five ICT systems:

- A tool for opinion analysis, so-called opinion mining, filters the wishes and needs of the citizens out of the mass data of social media like blogs or Internet forums.
- Web-based tools support the technical modeling and design of public services. Dashboards visualize current characteristics with respect to costs and value of the later service. Thus, these characteristics are taken into account already during software development.
- Another system validates the compliance of service designs with current regulations and legislation.
- A simulation tool calculates possible scenarios of service delivery for prediction of performance, value, and cost structure by means of numeric indicators and visualizations.
- An Internet-based deliberation platform presents possible service designs to the citizens, who optimize these services in dialog with the decision-makers of public administration.

“We integrate citizen opinions within the engineering process, ensure compliance with legal regulations, and make the underlying business processes transparent. This way, knowledge about costs and value can be considered already during service design,” explains service-engineering expert Zirpins. “The process of service innovation proceeds from the engineers to the Web, and thus to the citizens, whose opinions are again integrated into the engineering”. In that way, the COCKPIT software toolkit minimizes possible inconsistencies during planning and reduces service delivery costs. Quality of innovation and acceptance of services are both increased through participation of the citizens.

KIT’s share in the COCKPIT project is the service engineering methodology. Other research institutions include the IBM India research lab as well as the universities of Tilburg and Athens. In addition, enterprises like Intrasoft and Atos Origin as well as some innovative startups round off the consortium. The COCKPIT technology is validated by three pilot applications in the Greek Ministry of the Interior as well as the cities of Venice and Tilburg.

KIT scientist Zirpins does not consider the administrative tool to be a mere development project. “On the scientific level, the consortium studies how opinions can be extracted from a flood of raw data. One of the central exciting questions for us at KIT is how thousands of
people can be effectively integrated into the software service engineering process”. Integration of dedicated cost models in service engineering is another challenge met by the KIT researchers.

Karlsruhe Institute of Technology (KIT) is a public corporation and state institution of Baden-Württemberg. It fulfills the mission of a university and the mission of a national research center of the Helmholtz Association. KIT pursues its tasks in the knowledge triangle of research, teaching, and innovation.

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