Session Title: Boosting the App Economy: What's the role of APIs, Cloudlets & Data Driven Services?

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Purpose & Audience

In light of the opportunities opened up by Future Internet, one of the best paradigms that exemplify the power of innovation in accelerating change in industry and eventually society is the App Economy on which the present session focused. Reflecting the range of economic activity surrounding mobile applications, the App Economy has grown from a fad to a phenomenon in just a few years. During this session, Mobile backend-as-a-service (MBaaS), a concept that has very recently emerged and refers to solutions that provide pre-built, cloud hosted components for developing mobile application backends, was introduced. In the App Economy, there are three key pillars that are considered as instrumental for MBaaS and constituted the basis of this session's debate:

- APIs that create and unlock the business value of data

- Cloudlets that tackle personal data fragmentation and allow for better control over data

- Data-driven Services that capitalize on the power of open data and big data to offer added value to all stakeholders

The session's objectives were summarized as:

- To elaborate on the role of APIs and data-driven services to accelerate innovation

- To share the cloudlet vision and discuss how cloud platforms may enable consumers to store and manage their personal data and content in applications

- To present the challenges being faced by leading companies in this sector and how EU researchers are attempting to address them.

- To discuss the lessons learnt and the perspectives opened up

The session targeted a diverse public, starting with researchers and FP7 projects advancing the mobile app landscape and / or cloud technologies and continuing with industry representatives, particularly on web applications willing to exchange ideas and best practices.

Key message(s):
- Today, mobile applications constitute the new container for users' behaviour and create new pathways for innovation.
- Every individual, to his knowledge or not, leaves footprints of his digital presence to multiple fragmented locations, sensors, devices and apps that act as data silos.
- Privacy is being redefined and a paradigm shift in attitudes across different users' generations is noted.
- Despite the plethora of available solutions and tools, developers still struggle to realize seamless experiences across different platforms and services, and attach user-centric value to every interaction happening online.
- Unless standardized API wrappers are created around systems, every single project will continue to be more expensive.

Summary

Today, the App Economy has emerged as a collection of interlocking innovative ecosystems and is firmly associated with the web entrepreneurship spirit as many would-be entrepreneurs find a receptive environment to nurture their ideas. As more and more developers turn to mobile applications development, developer services, like MBaaS that access backend services, gain significant attention. A thriving market around MBaaS has been established in the last 2 years, yet a lot of challenges need to be addressed and opportunities to be grasped along the API, cloudlet and data-driven services levels.

From a developer perspective, APIs are often considered as the "glue" of software as a service (SaaS), as well as of legacy systems that literally enable a new way of doing business. Three main research and business streams towards a more Cross-Platform, Cross-Service, Cross-Cloud philosophy show tremendous future potential:

- APIs to abstract the functionality of available cloud-based services and offer it in an integrated, homogeneous manner to any interested developer, unlocking the data silos of social networks, file sharing services, payment services, etc.

- APIs to publish, access and curate open governmental data that are the holy grail of most governmental initiatives across the globe.

- APIs to expose enterprise activity (at internal or external level) and enable seamless collaboration with stakeholders.

In parallel, data-driven services are cross-cutting industries and appear in multiple application domains ranging from learning to mobile marketing in order to reap the benefits of the "data deluge". However,

developers still have not yet fully harvested the potential hidden in the vast amount of data passing through their applications. Privacy, data anonymization and the impact of policy framework are listed among the top concerns in this context.

From an end-user perspective, there are two opposite cases: on the one hand, certain users (typically the "Generation X") are conscious about their personal data and are keen on investing on services and solutions that facilitate their everyday life without compromising their privacy and rights, in general; on the other hand, younger users (typically the "Generation Z") are willing to share with a large audience their personal data without any concern. In the direction of tackling the problem of data fragmentation among multiple services, applications and clouds, the concept of having a cloudlet, as the personal single point of access gathering all data from multiple sources in the cloud, has the credentials to attract significant attention as long as issues around privacy, confidentiality and authorization are adequately addressed. However, despite how highly valued security and privacy are, they are not the sole concerns around the personal cloudlet concept and although their importance is unanimously acknowledged, they should not monopolize the research interest.

In conclusion, APIs, personal data spaces (cloudlets) and data-driven services demonstrate at individual and collective level the disruptive potential of the App Economy in society and business.

Recommendations

The need to bridge the ever increasing demands of users with the entrepreneurial spirit is more relevant than ever. APIs, cloudlets and data-driven services may appear as industry-driven initiatives, yet there is huge untapped potential for research, indicatively targeting fragmentation of platforms and systems, data access and policies, or privacy.