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Cloud Service Brokerage - 2013: Methods and Mechanisms

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Abstract. In the future, the Cloud will evolve into a rich ecosystem of service providers and consumers, each building upon the offerings of others. Cloud service brokers will play an important role, mediating between providers and consumers. As well as providing vertical integration and value-added aggregation of services, brokers will play an increased role in continuous quality assurance and optimization. This may range from setting common standards for service specification, providing mechanisms for lifecycle governance and service certification, to automatic arbitrage respecting consumer preferences, continuous optimization of service delivery, failure prevention and recovery at runtime. This workshop introduces some of these anticipated methods and investigates some of the mechanisms envisaged in future Cloud service brokerage.

Preface

This volume contains the proceedings of the 1st International Workshop on Cloud Service Brokerage (CSB-2013), which was held on 2 December 2013 in the historic city of Berlin, co-located with the 11th International Conference on Service Oriented Computing. The theme of this first workshop, which is sponsored by the EU FP7 Broker@Cloud project, is the investigation of methods and mechanisms to be deployed in future Cloud service brokerage.

It is an exciting time to be working in the area of Cloud computing. The world is waking up to the fact that in the future, we will be more likely to work in a location-independent way, with our personal and business-related information following us around as we go, accessed virtually in cyberspace. Large companies such as IBM have already realised the cost savings benefits of closing down under-utilized server rooms and migrating to a private Cloud, hosted on fewer, more efficiently operated data centres. The market is growing rapidly for infrastructure, platform, and software service providers, such as Salesforce, Amazon, Microsoft, Oracle, Google, SAP,

SoftLayer, Terremark, Rackspace, and NetSuite, who have reported turnovers in their Cloud-facing businesses ranging from $1-3bn in 2013, demonstrating the increasing value in Cloud computing.

However, this is only the beginning. We are currently experiencing a highly competitive period, where the big vendors are seeking to establish their products in the marketplace. But we expect a more cooperative model to emerge as the market settles, with further vendors emerging, who are more open and build upon other vendors' offerings. This has already started, with the Heroku platform consuming Amazon infrastructure. Similarly, many bespoke CRM systems integrate already with Google Apps, providing mobile maps and calendars. In the future, Cloud Service Brokers will play a role in matching providers with consumers at each level in the Cloud stack. Industry analysts such as Gartner and Forrester have foreseen brokers playing the role of intermediaries, either integrating different partners, or aggregating their services, offering added value on brokered platforms.

The emergence of the Cloud Service Broker was the motivation behind the EU FP7 Broker@Cloud project, whose goal is to investigate methods and mechanisms for continuous quality assurance and optimization for Cloud service brokerage. This workshop reports some of the early findings from that project; but also presents an equal number of papers from outside the consortium. Three papers describe the birth of this new business model in cyberspace. Fowley, et al. look at different emerging models for Cloud service brokerage; while Kourtesis, et al. analyse the key requirements for delivering quality assurance and optimization in Cloud service brokerage. Duan et al. investigate value-driven business modelling, describing the incentives to brokers and others who operate in the Cloud. A further three papers look in detail at some of the technologies that will realize the goals described above. Bratanis and Kourtesis look at the whole notion of lifecycle governance in the Cloud, and the kinds of monitoring mechanisms needed for failure prevention and recovery. Kiran, et al. show how providing simple model-based specifications for services supports a powerful testing methodology to increase trust in the quality of service behaviour, and also acts as a powerful force for standardisation. Finally, Duan et al. offer a value-added modelling approach to describing the revenue increments earned by different players, including brokers, in the Cloud.

We, the workshop chairs, are grateful to our international and widely-experienced Programme Committee, who selected the most interesting six papers from twelve submissions. Altogether, the papers collected here represent a diverse range of analyses, ranging from the envisioning of the future, to the technical challenges and solutions and the measurement of economic benefits for Cloud Service Brokerage. We hope that you find these insights stimulating!