Chapter 17
Delivering Knowledge Services in the Cloud

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ABSTRACT

Cloud computing has become a buzzword in various academic and business domains in recent years. The purpose of this paper is to look into this term within a different proposition as a knowledge delivery ecosystem instead of being merely a model for technology deployment. This paper tries to explore various topics and resources in recent years which have appeared in both scientific and business literatures that focus on providing “knowledge-as-a-service” (KaaS) based on the cloud’s value-added environment.

INTRODUCTION

Doing a search on the term “Cloud Computing” on the web may yield various definitions from every single business enterprise or a research paper. As the “Cloud Computing” term is not new, today, the term has been so developed that computation is just a small part of it. The word “Cloud” which has an extended meaning for the “Internet” has now become more popular as it embraces various services, resources, and functionalities inside. Figure 1 shows the rough picture of such a growth in contents inside published books on the Cloud Computing topic. (While searching for the “Cloud” almost gives the same trend picture, we tried to use “Cloud Computing” to avoid results that might be irrelevant to the topic. Also the smoothing level of 4 has been applied to give the average trend slope within 5 years. Check http://ngrams.googlelabs.com/info for more information on smoothing.)
In such a positive trend, the Cloud has found its niche well as infrastructure, platform and software (IaaS—Infrastructure as a Service, PaaS—Platform as a Service, SaaS—Software as a Service). The new look to this trend is an integrated approach where all these three components of infrastructure, platform and software come together to provide an aggregated ecosystem for the delivery of services.

As there are various types of services that can be delivered based on a cloud ecosystem, in this paper, the focus is on the fundamental knowledge-based services that can be rendered in a cloud environment.

Knowledge-Intensive Services

As everyday passes on the web, there are more and more data available to be processed. This speedy data accumulation calls for a real-time knowledge derivation mechanism to keep up at least the trade-off between knowledge demand and supply on a real-time basis with in an enterprise (In today’s real world, the knowledge supply should even exceed the demands for prediction and forecasting purposes in a business environment).

Middleton (2010) and Mohammed et al. (2010) describes this as “Data Gap” originally dubbed by LexisNexis where the knowledge demand outpaces the supply. There are various reasons that that brings this disequilibrium for knowledge feeds in knowledge-intensive processes. This is mostly brought about by a society’s transformation into a knowledge-based economy whereby many of tasks and decisions are knowledge-based (i.e., dependent on what one knows and experience) and that knowledge, increasingly, becomes an item that organizations and individuals compete and excel for. Transformation into the knowledge-based economy gives birth to Knowledge Work. Most noticeably, some of the characteristics of knowledge work are:

- Increasingly less routine, more analytical knowledge that needs to be delivered more collaboratively
- Highly unstructured, unpredictable and disruptive knowledge which often comes with a sense of urgency
- The processes not only require data and information but also knowledge and experience of the individuals