Chapter 81
New Media Cloud Computing: Opportunities and Challenges

P. Sasikala
Makhanlal Chaturvedi National University of Journalism and Communication, India

ABSTRACT

New Media is a generic term for the many different forms of electronic communication that are made possible through the use of computer technology. New media refers to on-demand access to content anytime, anywhere, on any digital device, as well as interactive user feedback, creative participation and community formation around the media content. Another important promise of new media is the "democratization" of the creation, publishing, distribution and consumption of media content along with real-time generation of new and user created content. Cloud computing, is a style of computing where scalable and elastic IT-related capabilities are provided as shared assorted services (IaaS, PaaS, SaaS, DaaS). It is metered by use, to customers using internet technologies built on top of diverse technologies like virtualisation, distributed computing, utility computing, and more recently networking, web infrastructure and providing on-demand network access to a shared pool of configurable computing resources. It represents a paradigm shift in how we think about our data, the role of our computing devices and on managing computing resources. Being an emerging service technology with promising novel and valuable capabilities it attracts industrial research community with main focus on standardisation and customised implementation in every segment of society. To meet out the ever growing popularity of the inevitable new media applications and services over the Internet and the way it overpowers mobile devices, there is a strong demand for cloud integration. This paper outlines the concepts of new media cloud computing and addresses the problem of handling exponential growth of online data. It presents a novel framework for New Media Cloud Computing. A preliminary simulation of the work on the proposed architecture shows that there is increase in the quality of computations done, despite the demand of constant updating of resources in New Media environment.

DOI: 10.4018/978-1-4666-6114-1.ch081

INTRODUCTION

New Media is a 21st Century catchall term used to define all that is related to the internet and the interplay between technology, text, images and sound. In fact, the definition of new media changes daily, and will continue to do so. New media evolves and morphs continuously (Hin & Subramaniam, 2011). What it will be tomorrow is virtually unpredictable for most of us, but we do know that it will continue to evolve in fast and furious ways. The technologies described as "new media" are digital, often having characteristics of being user generated data, networkable, dense, compressible, and interactive. As a consequence of the quick embrace of New Media by business, causes, communications, and a multitude of others, the question of "what is new media?" did not receive an official or standardized response. The term "new media" seems to escape its very definition. Loosely, new media is a way of organizing a cloud of technology, skills, and processes that change so quickly that it is impossible to fully define just what those tools and processes are. New media has had a profound effect on three of the most essential categories of society in the twenty-first century: economics, politics, and the exchange of ideas (Logan, 2010). Where is new media really going, and are we, as users, constructing the destination or are we blindingly falling into its clutches through necessities and paradigms? Perhaps the potential of new media is a function of its intermediate development and our social, political, and economic transition within and outside of it (Jones, 2011).

Cloud computing is an emerging technology aimed at providing various computing and storage services over the Internet (Sasikala, 2011a; Sasikala, 2011b). It generally incorporates infrastructure, platform, and software as services (Sasikala, 2011c). Cloud service providers rent data-center hardware and software to deliver storage and computing services through the Internet (Sasikala, 2011d). By using cloud computing, Internet users can receive services from a cloud as if they were employing a super computer (Sasikala, 2012a). They can store their data in the cloud instead of on their own devices, making ubiquitous data access possible (Sasikala, 2012b). They can run their applications on much more powerful cloud computing platforms with software deployed in the cloud, mitigating the users' burden of full software installation and continual upgrade on their local devices (Sasikala, 2012).

With the development of Web 2.0, new media is emerging as a service. To provide rich media services, new media computing has emerged as a noteworthy technology to generate, edit, process, and search media contents, such as images, video, audio, graphics, and so on. For new media applications and services over the Internet and mobile wireless networks, there are strong demands for cloud computing because of the significant amount of computation required for serving millions of Internet or mobile users at the same time. In this new cloud-based new media-computing paradigm, users store and process their new media application data in the cloud in a distributed manner, eliminating full installation of the media application software on the users' computer or device and thus alleviating the burden of new media software maintenance and upgrade as well as sparing the computation of user devices and saving the battery of mobile phones. The demanding apps in mobile devices are new media channels that are expected to be fine tuned with convergence of cloud computing.

New media processing in a cloud imposes great challenges. Several fundamental challenges for new media computing in the cloud are highlighted as follows. 1) New media and service heterogeneity: As there exist different types of new media and services, such as voice over IP, video conferencing, photo sharing and editing, new media streaming, image search, image-based rendering, video trans coding and adaptation, and new media content delivery, the cloud shall support different types of new media and new media services for millions