

A Survey of Communications and Collaborative Web Technologies

Narayanan Kulathuramaiyer¹ and Hermann Maurer²

¹Faculty of Computer Science and Information Technology, University Malaysia Sarawak, Malaysia

²Institute for Information Systems and Computer Media (IICM), Graz University of Technology, Austria

The web has changed the way we do things in a variety of ways. It is not uncommon to associate the term disruptive technologies to the radical changes happening on the web. This paper takes an encompassing view of developments surrounding the web with a particular emphasis on emerging trends and evolving application scenarios. We provide a broad overview of technologies, in revealing directions for emerging developments as well as directions for next-generation developments. This survey paper first reviews aspects of the web growth and its contributing factors such as the expanding landscape of social networks, mass collaborative system capabilities, and eCommunities. We then present concerns relating to the numerous developments, particularly with respect to social and political developments. This paper clearly points out the knowledge gaps and the ensuing dangers arising from the purely commercial perspectives and motivation that is driving the web. By focusing on the trees rather than the forest as a whole, we are in the process of losing ourselves and endangering our future. Subsequently, we explore the implications of current developments in enabling the web to serve as a platform for serious work, in allowing users to focus on creatively shaping of our world.

Keywords: web technologies, web services, web applications, social implications, dangers of the emerging technologies

Categories: H.4., I.2., K.4.

1. Introduction

The web has truly transformed the way we do things in a variety of ways. For many of us, it now becomes difficult to imagine a world without the web. It has grown to become an immense resource beyond anything we have ever seen before. For the younger generations, it is becoming the preferred platform for collaborative problem solving and fast-and-easy

decision-making. Due to their increasing faith and reliance on this technology, we see the need for the responsible delivery of information that actually address the knowledge needs, while seriously taking into consideration the long-term implications and consequences on society.

While the web is establishing itself as an increasingly engaging social platform that is connecting and empowering communities of users and individuals, there are clear warning signals indicating that it is producing the dumbest generation ever [Maurer, 2015]. As emerging developments strives to assimilate everything we do within the folds of the web, serious interventions are abruptly needed to set things straight. This survey paper considers technological development in a broad sense, while attempting to provide an overview of emerging developments and trends. Emerging technological directions are contextualized within an encompassing framework that projects a converging viewpoint in spite of all the diverse, isolated explorations. The main focus however will be on concerns surrounding the web and its emerging applications.

The first section of this paper attempts to provide an overview of evolutionary web developments. Here we provide a broad overview of the aspects such as social networks, eCommunities and mass collaboration systems. Subsequently, we will review the layering framework of technologies and explore various concerns.