Chapter 1
Web X.0: A Road Map

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ABSTRACT

The Web has evolved from its humble beginnings merely as a publishing medium intended for a small group of scientists to a medium of interaction, participation, and collaboration. It has dramatically influenced almost every sphere of our activity and has created paradigm shifts. Encompassing new technologies, business strategies, and social trends, the Web continues to forge many new applications that we had never imagined before or were not previously feasible. It has created new paradigms in business, social interaction, governance, and education. In this chapter, we trace the Web's continuing evolution and phenomenal strides, outline the features and characteristics of Web 2.0, 3.0, and X.0, and examine their prospects and potential. The ability to recognize new Web technologies for their potential in business, social and educational applications, and the ability to develop and deploy creative applications based on these technologies are the keys to continued success of the Web and our progress and well being.

INTRODUCTION

The Web has become the most significant technology of the 21st century. In its rapid rise, it has caused many welcome disruptions. For instance, it has made people change how they gather information, do their work, buy goods and services, connect with friends and family, spend their leisure time, and even find their partner and lost friends and acquaintances. It has also forced businesses to rethink and change how they conduct business, connect with their customers and suppliers, innovate, and collaborate. Furthermore, the Web has changed even the face of politics and governance.

Since its inception 20 years ago, the Web has evolved steadily and significantly and still continues to evolve along multiple directions. The nature and structure of the Web, as well as the way we use it, have been continuously changing. The Web evolution is huge that we have started to place the
evolution—past, current, and anticipated—into different stages as Web 1.0 (the traditional Web), Web 2.0, Web 3.0, and so on. While the use of the terms Web 2.0 and Web 3.0 have become quite common now, they however, defy a widely agreed-upon, concise definition, perhaps because “the underlying phenomenon is so huge and important that it resists any attempt to pin it down.” These terms can be described from different viewpoints and in different ways depending on intended application; each of them is considered a collective term.

The Web’s evolution, which we call Web X.0, or Web X.Y, movement, is aimed at harnessing the potential of the Web in a more interactive and collaborative manner with an emphasis on social interaction. It is also aimed at facilitating collaboration and leveraging the collective intelligence of peers, as well as of collective information available on the Web by judicious use of old and new Web technologies in new ways.

Web 2.0 has become a mainstream technology now. Motivated by some highly successful social and business applications based on Web 2.0, such as MySpace, Linked-in, SecondLife, Flickr, and YouTube, Web 2.0 technologies and concepts are now widely used in several different domains. And within five years, as you can recognize, Web 2.0 has changed the face of the society and business significantly and has forged into enterprises in ways that were previously unimaginable. Web 3.0 has begun to make its headway and its promises are even more significant, and we are yet to experience its influence and impact.

Given these scenarios, can you afford to simply ignore Web 2.0 and 3.0 – and the future incarnations of the Web - considering them simply as hype or a passing fad, as some educated skeptics do? Certainly not! In fact, you should harness and embrace them. And researchers in all areas – not just information and communication technology - must identify and address the problems and challenges the new generation Web pose and devise new ways of using them harnessing their potential. In this chapter, setting the background for the chapters that follow, we outline the features and characteristics Web 2.0, 3.0 and X.0 and examine their prospects and potential.

WEB X.0: WHAT DOES IT REPRESENT

As we pointed earlier, we can set the ongoing Web’s evolution into stages: Web 1.0, Web 2.0, Web 3.0, and Web 4.0 (see Figure 1). One way of identifying them based on what they do and who or what is at the core of their action. The first stage, Web 1.0, is about connecting information; Web 2.0 is about connecting people; Web 3.0 is about integrating data, knowledge, and applications on the Web and putting them to work in ways that make the Web more meaningful and about making Web as a collaborative platform; and Web 4.0 is about harnessing the power of human and machine intelligence on a ubiquitous Web, where both people and computers not only interact, but also reason and assist each other in smart ways (Murugesan, 2007c).

Web 1.0

The traditional Web—now called Web 1.0 -- is primarily a one-way publishing medium. The primary objective has been to publish information for easy access by anyone using a standard Web browser through the Internet. Subsequently, it was put to use for commercial applications and online transactions giving birth to the emergence of electronic commerce, or e-commerce. Foundations for the Web were set in this phase. The major developments and advancements were protocols such as HTTP, markup languages such as HTML and XML, Web-centric languages such as Java and JavaScript, Web browsers, Web development platforms and tools, the creation of Web sites academic activities, the use of the Web for commercial purposes for the first time, emergence of