Chapter 2
Seeing Where We Need to Be

Information is everything and everything is information. As world renowned physicist John Archibald Wheeler poetically puts it: "it from bit," meaning every "it," that is, "every particle, every field of force, even the space-time continuum itself, derives its way of action and its very existence entirely, even if in some contexts indirectly, from the detector-elicited answers to yes or no questions, binary choices, bits." What Wheeler means here is that "all things physical, all *its*, must in the end submit to an information-theoretic description" (Wheeler). In other words: everything is information. It is not easy to put the ideas of this book, that is, the ideas describing the anatomy of sustainable Web ecosystem design, into a neat and clean box. In fact, I am not sure it is even possible. We know that this is the case because what we are really talking about here is organizing, indexing, and making it fun and efficient to access information. As we know, information is everything, everywhere, all of the time. At this point in human evolution it is not unlike a fish trying to understand water. Quite frankly, that is a tough idea to get your head around. Further, we are not simply trying to understand that information is everything, everywhere, but we are trying to go a step further and become information's master manipulator. At will, no less. Then put it onto devices, many different kinds of devices, and make it accessible to billions of people across countries, languages, ages, backgrounds and abilities. We want to make information work well for us. We want to make it sustainable over time. In all, what we face is no small task. That is why this book has been written. Essentially what we are talking about is a unified theory on how to create the interface between front end Web design and development methodologies and practices matched with the every day human user. This is a tall order.

In our current media-rich environment a Web site is more than a collection of relative html documents containing text and other digital media that are stored on a static server in a file system waiting to be served up to a singular desktop computer monitor. Early on, in fact, this was the case, however, those days are long gone. In the 20 years since Netscape Navigator invaded private homes and played a major role in bringing the Internet to the masses we reached a point where there are an unlimited number of possible combinations of screens, devices, platforms,

browsers, locations, versions, users, uses, and Exabytes of all types of data with which those of us on the connected side of the access digital divide can interact. This is complicated. Further, today our mediated atmosphere surrounds us all of the time, and in nearly every place. It is an information-centric ecosystem that is part human, part hardware, and part software. A unique condition is upon us. This book is about a methodology of creating Web-based systems (i.e. Web sites, mobile environments, content, etc.) that considers each of the parts, the modules, the organisms—binary or otherwise—that constitute the anatomy of a balanced, sustainable Web ecosystem. Written in a highly approachable, practical style in hopes of making a complex condition easily accessible the messages contained in this book are useful for stakeholders, system administrators, developers, designers, content managers, and the anonymous Web user in industry and the same plus faculty, staff, and students of all levels involved in teaching and learning in information technology.

   This book aims at describing a theory of each of the requisite nodes that must come together and function in a type of harmony in order to create a sustainable informational system in general, and one that includes Web functionality and user interface interactivity in particular. The whole system that is the Web presence— that is, a sum of all of the required parts, elements, steps, and considerations that are part of the recipe—needs to be designed for sustainability. This is not solely a political debate. It is not only an economic strategy. It is not an autonomous ethically-eco decision concerning our information and technological health. It is all of these. And here, as in other sustainability-driven initiatives, the real value resides in the sum total.

   As anyone who has been involved in creating a Web-based system knows it is an understatement to say that there are a lot of moving parts to this process. The planning, design, development, even the users can and do change often. Heck, even the environment itself where a project is taking place can change. What makes the process more complex still is that the parts don't stop moving once the goal has been achieved. The parts are always moving, no matter what stage in the design and development process you are in. To add yet another layer of complexity to the process, the future of the technology we are using to build today as well as the environments in which this technology will (hopefully) be working in the future are also somewhat uncertain. We strive for the best possible outcomes in a nearly perfectly dynamic environment, using tools and methods that are equally dynamic in nature. It is for precisely this reason that this book exists. It is a book of one idea made up of many different parts. That one idea is a theory, a method- ology, of what needs to be considered and taken into account when creating an informational Web system of any kind. No matter what you are dreaming, scheming, planning, designing, developing or maintaining, these are consider- ations that need to be made. Whether you are working in industry, ecommerce, education, politics, or as a fine artist creating and/or publishing your work, these considerations need to be made. This book is not a coding how-to manual. This is not a resource to learn how to get your hosting servers up and running, or how to update and patch your content management systems for security. This is not even a

book on how to design a beautiful Web or mobile interface. There are countless resources in the world today for these topics—some of them are even pretty good. This book is about a fresh, holistic perspective on how to bring a rather long set of important processes together, that is, to be thoughtful in order to create the most lightweight, accessible, exciting, and sustainable Web ecosystem. Consider it a mile-high view, but an important view to be certain.

2.1 The Anatomy of Sustainable Web Ecosystem Design

The necessary nodes of the front end Web-human interface ecosystem are referred to as the anatomy, which is simply a dissection of the whole system. Here we look at the important parts of that whole. In order to illustrate this anatomy of the ecosystem we can use this infographic in Fig. 2.1. The infographic shows the relationships that are created from each of the important considerations in the Web ecosystem. To address and understand each of these areas as you embark on your next Web project means that you are in a sound place. You are off on the right foot,
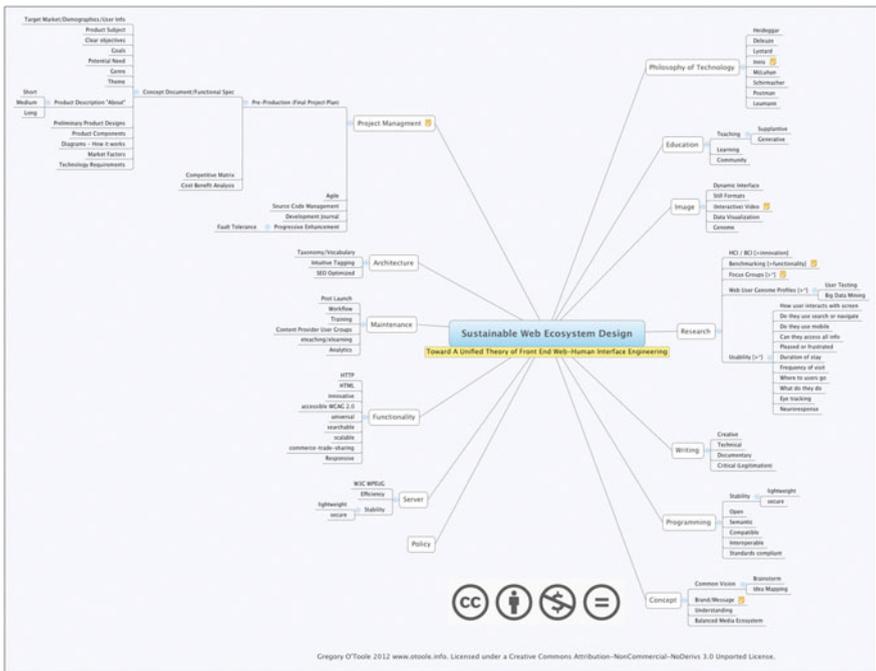

Fig. 2.1 The anatomy of sustainable Web ecosystem design shows the necessary nodes of the ecosystem, the dissection of the whole. This node map is updated frequently. A high resolution, updated version of this infographic is freely available at http://www.otoole.info

so to speak, and you will have a strong start to your project, and a road map that will aid in the successful achievement of your goals.

Please note that this freely available infographic is maintained online at http://www.otoole.info. Visit the site at any time to zoom in and get a closer look at the anatomy. The online version is also updated periodically and therefore you will be able to view the most recent version. Further, the online version includes the context of how the anatomy of sustainable Web ecosystem design fits into the relationship schema of the individual, information, and society. This topic is introduced later in this book.

Suggested Web Resource(s):

Anatomy of Sustainable Web Ecosystem Design infographic: http://www.otoole.info.