

Great natural disasters have occurred many times throughout human history. Events such as the San Francisco earthquake of 1906, the 2004 Sumatra earthquake and tsunami, and the 2011 Japanese earthquake and tsunami have caused massive destruction and suffering. With the modern tools of risk analysis, forecasting, and the world wide web available, human societies should no longer tolerate the human and economic losses these disasters produce. Thanks to new technologies and web-based applications, it will soon be possible to enable a more sustainable human society in the face of severe, recurring natural disasters in the complex earth system.

Web-based information services make it easy to specify geographical locations and describe specific building structures. Couple this with publicly available data and web-based mapping tools and the public can make more informed choices about how to manage their personal exposure to risk from natural catastrophes. Simple, robust models and simulations currently exist for a variety of multihazards: from earthquakes to wildfires to floods and landslides to natural gas emissions. Furthermore, hazard analysis and mitigation tools have evolved to the point of usefulness for non-technical laypersons.

In this presentation, I describe a browser-based approach to multihazard analysis and warning. The US census estimates over 62 million households (55%) have internet-connected computers at home. Furthermore, even larger numbers have internet access through work and public means. Current generation browsers are robust enough to dynamically receive data and customize results, reducing the resources needed server-side while increasing the personalization of the experience. By using open formats to describe the data (KML) and public tools to display the data (google maps), we can create a user interface that anyone can access from anywhere at anytime. Furthermore, raw data can be queried from the interface and incorporated into user-developed applications.