



WSRI

web science research initiative

Introduction

our motivation

- the Web has been transformational
- we need to understand it
- anticipate future developments
- identify opportunities and threats
- we have established a new discipline: Web Science



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Introduction

our aims

- promote and encourage multidisciplinary collaborative research to study the development of the Web
- provide a global forum to enable academia, government and industry to understand the scientific, technical and social factors that drive the growth of the Web and enable innovation
- devise curricula for the new discipline of Web Science so as to train future generations of Web Scientists

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Introduction

directors



Tim Berners-Lee



Wendy Hall



Nigel Shadbolt



Daniel Weitzner

the reputations, experience and skills of our Directors enables us to work closely alongside academia, government, industry and donors to realize our aims

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Where we are launch November 06

“Web Science represents a pretty big next step in the evolution of information. This kind of research is likely to have a lot of influence on the next generation of researchers, scientists and, most importantly, the next generation of entrepreneurs who will build new companies from this.”

Dr Eric Schmidt, CEO, Google Inc.



“Web Science research is a prerequisite to designing and building the kinds of complex, human-oriented systems that we are after in services science.”

Irving Wladawsky-Berger, VP, Technical Strategy and Innovation, IBM Corporation.

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Governance structure

- **scientific council**
leaders in their disciplines
- **strategic advisory board**
individuals with influence
- **corporate advisory board**
companies committed to Web Science

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Where we are

WSRI Operational Phases

Phase 1: Nov 06 to Nov 07

Launched the concept and targeted activities

Phase 2: Dec 07 to Nov 08

Establish operational base in America and Europe

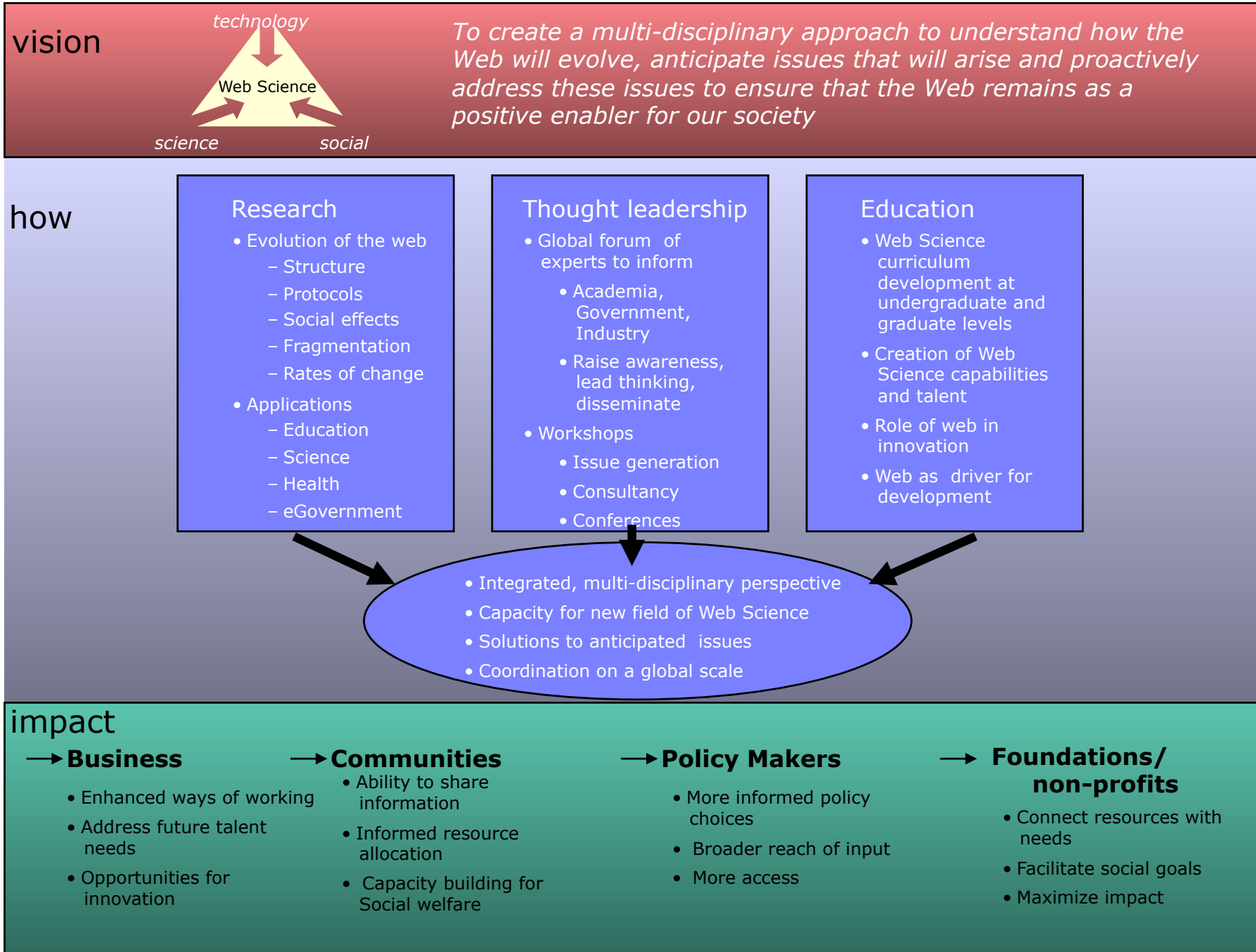
Phase 3: Dec 08 onwards

Build a global, multi-partner organization and expand activity base

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WSRI- a catalyst for the future web



What is Web Science?

The Web has been transformational

Largest human information construct

How are we to

Understand what it is

Develop its engineering

Ensure its social benefit

Develop capacity

This requires a new interdisciplinary field -

This field we call Web Science

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Web Science EMERGES

Studying the Web will reveal better ways to exploit information, prevent identity theft, revolutionize industry and manage our ever growing online lives

By Nigel Shadbolt and Tim Berners-Lee

Since the World Wide Web blossomed in the mid-1990s, it has exploded to more than 15 billion pages that touch almost all aspects of modern life. Today more and more people's jobs depend on the Web. Media, banking and health care are being revolutionized by it. And governments are even considering how to run their countries with it. Little appreciated, however, is the fact that the Web is more than the sum of its pages. Vast emergent properties have arisen that are transforming society. E-mail led to instant messaging, which has led to social networks such as Facebook. The transfer of documents led to file-sharing sites such as Napster, which have led to user-generated portals such as YouTube. And tagging content with labels is creating online communities that share everything from concert news to parenting tips.

But few investigators are studying how such emergent properties have actually blossomed, how we might harness them, what new phenomena may be coming or what any of this might mean for humankind. A new branch of science—Web science—aims to address such issues. The timing fits history: computers were built first, and computer science followed,

—The Editors

KEY CONCEPTS

The relentless rise in Web pages and links is creating emergent properties, from social networking to virtual identity theft, that are transforming society.

A new discipline, Web science, aims to discover how Web traits arise and how they can be harnessed or held in check to benefit society.

Important advances are beginning to be made; more work can solve major issues such as securing privacy and conveying trust.

which subsequently improved computing significantly. Web science was launched as a formal discipline in November 2006, when the two of us and our colleagues at the Massachusetts Institute of Technology and the University of Southampton in England announced the beginning of a Web Science Research Initiative. Leading researchers from 16 of the world's top universities have since expanded on that effort.

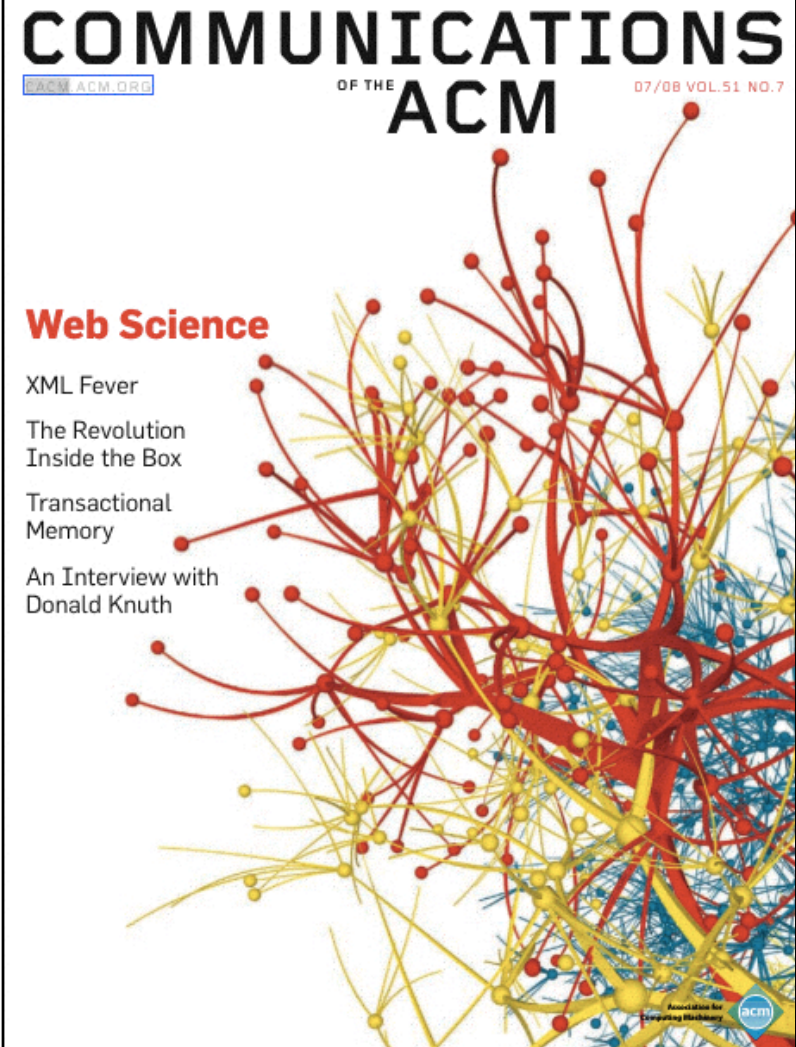
This new discipline will model the Web's structure, articulate the architectural principles that have fueled its phenomenal growth, and discover how online human interactions are driven by and can change social conventions. It will elucidate the principles that can ensure that the network continues to grow productively and settle complex issues such as privacy protection and intellectual-property rights. To achieve these ends, Web science will draw on mathematics, physics, computer science, psychology, ecology, sociology, law, political science, economics, and more.

Of course, we cannot predict what this nascent endeavor might reveal. Yet Web science has already generated crucial insights, some presented here. Ultimately, the pursuit aims to answer fundamental questions: What evolutionary patterns have driven the Web's growth? Could they burn out? How do tipping points arise, and can that be altered?

Insights Already

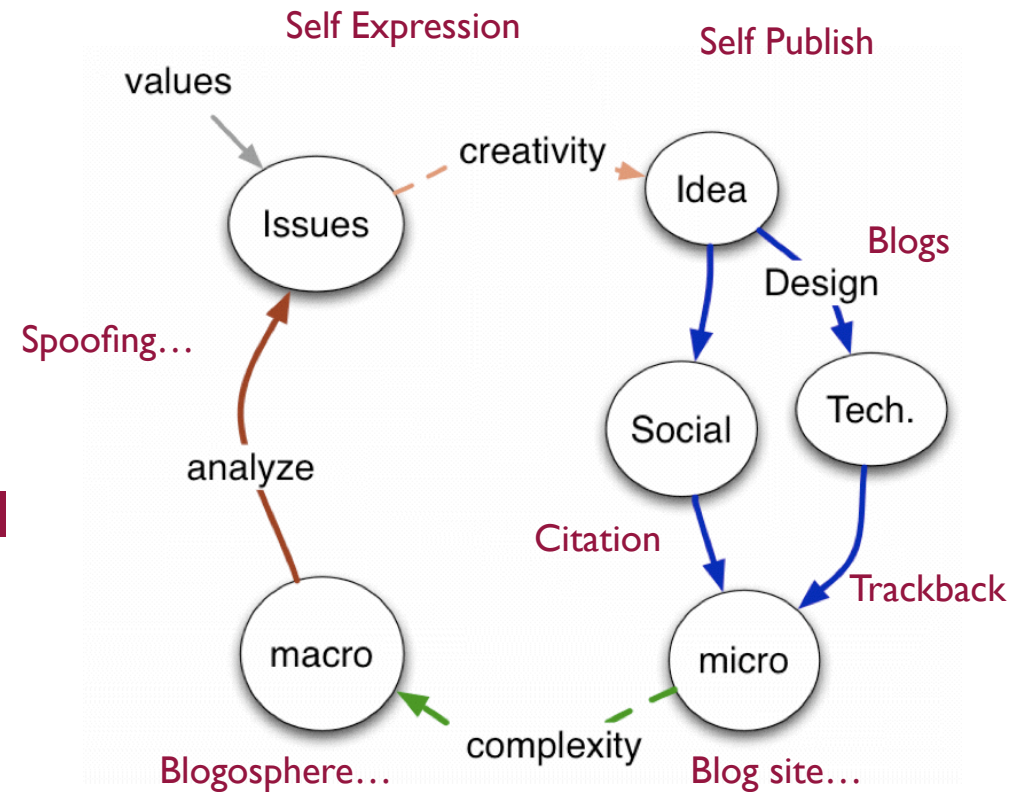
Although Web science as a discipline is new, earlier research has revealed the potential value of such work. As the 1990s progressed, searching for information by looking for key words among the mounting number of pages was returning more and more irrelevant content. The founders of Google, Larry Page and Sergey Brin, realized they needed to prioritize the results.

Their big insight was that the importance of a page—how relevant it is—was best understood in terms of the number and importance of the pages linking to it. The difficulty was that part of this definition is recursive: the importance of a page is determined by the importance of the



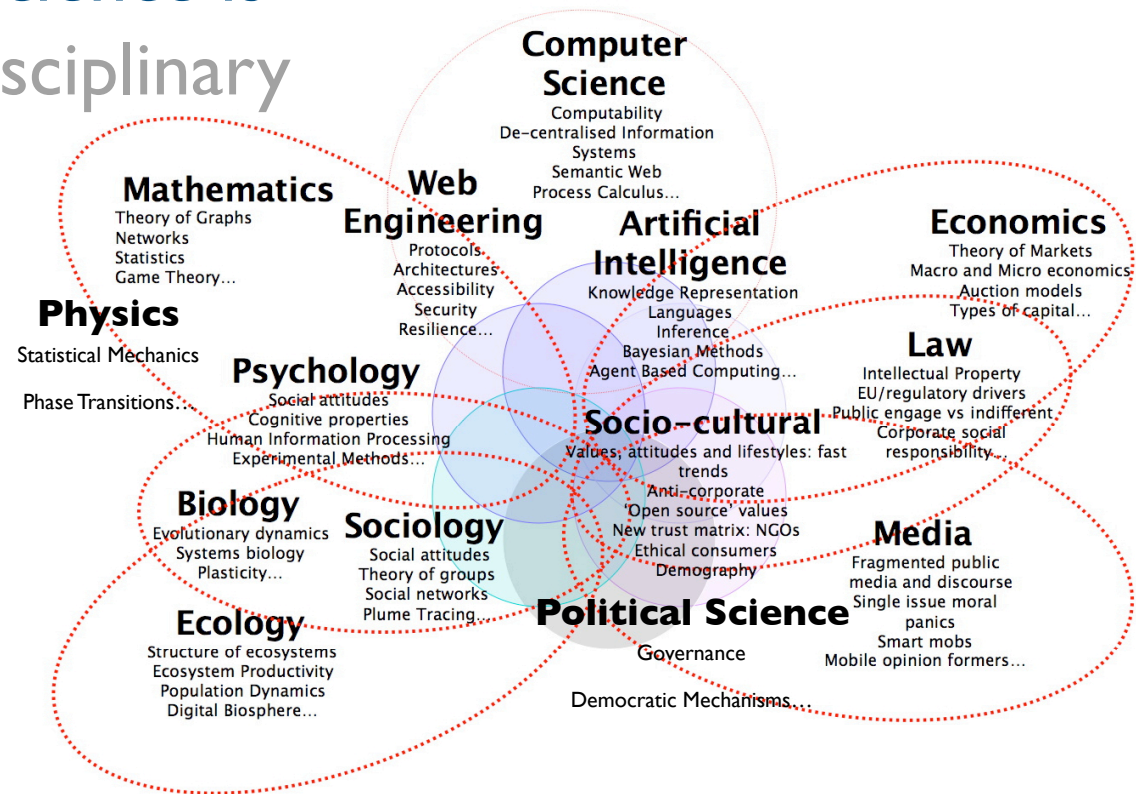
Web Science Understanding

- creative innovation
- design and engineering
- the social and the technical
- interpretation and analysis



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Web Science is interdisciplinary



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WSRI Affiliation Activities

- WSRI Affiliated Labs (WAL's)
- Wider network of Web Science research groups
- Curriculum Development
- WSRI Ambassadors and Evangelists

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WSRI Affiliated Web Science Labs

- Developing a network of Web Science Labs around the world
- Pursuing a coordinated programme of work
 - Research – annual meeting of research directors
 - Doctoral Summer Schools
 - Curriculum Development
 - Technology Transfer



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Web Science

why this matters

- the Web matters
- an essential part of humanity
- understanding the Web is a major challenge as big as any other global cause



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