

# Roadmaps book

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Executive Summary	This deliverable presents four books that were created with significant ServiceWeb3.0 support. The core Future Internet technologies as well as roadmaps towards the Future Internet are described in these books. For each of the books we provide first a short description followed then by a summary of ServiceWeb3.0 contribution.
Keywords	Future Internet, Service Web 3.0, semantics, Roadmaps, Books.

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## 1. INTRODUCTION

In this deliverable we report on roadmaps books created with ServiceWeb3.0 involvement and support. The list of books includes: (1) "Towards the Future Internet – A European Research Perspective", the Future Internet Assembly book published in 2009 and distributed at the Future Internet Conference in Prague, (2) "Towards the Future Internet – Emerging Trends from European Research", the Future Internet Assembly book to be published and distributed in April 2010 at the 5<sup>th</sup> Future Internet Assembly in Valencia, (3) Semantic Web Services Handbook and (4) Handbook of Semantic Web Technologies.

The previously mentioned books are meant as dissemination channel for publishing ServiceWeb3.0 results. They represent just one of the many dissemination channels used within the project. Other channels include for example the publication of roadmaps, such as the semantic technologies roadmap published at the 3<sup>rd</sup> STI Roadmapping Workshop [5], and the publication of ServiceWeb3.0 project results at the 3<sup>rd</sup> International Conference on Semantic Computing 2009 (ICSC 2009) [6]. The focus of this deliverable is on the books produced by the ServiceWeb3.0 partners, books that are top references for core domains of the Future Internet such as services and semantics.

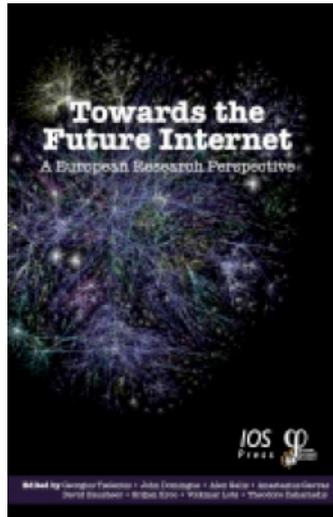
The deliverable is structured as follows. Section 2 describes four books that were created with significant ServiceWeb3.0 support. For each book we provide first an overview and then we detail ServiceWeb3.0 contribution. Section 3 summarizes and concludes the document.

## 2. ROADMAPS BOOKS

### 2.1. "Towards the Future Internet – A European Research Perspective" – FIA Book 2009

#### 2.1.1. Book overview

The Future Internet Assembly published in 2009 a book titled: "Towards the Future Internet - A European Research Perspective", edited by Georgios Tselentis, John Domingue, Alex Galis, Anastasius Gavras, David Hausheer, Srdjan Krco, Volkmar Lotz, Theodore Zahariadis [1]. The book is a peer-reviewed collection of 32 scientific papers addressing some of the challenges that will shape the Internet of the Future. The selected papers are representative of the research carried out by EU-funded projects in the field of Future Internet. The book offers, above all, a vision of the future rather than an account of deployed solutions. It presents representative research results in seven interrelated area of research for Future Internet: Socio-economics, Trust and Identity, Experimental Research, Management and Service-aware networking Architectures, Service Offers, Content Networks and Real Word Internet.



**Figure 1. “Towards the Future Internet – A European Research Perspective” – FIA book 2009**

### **2.1.2. ServiceWeb3.0 contribution to this book**

ServiceWeb3.0 members have contributed significantly to FIA book 2009. Open University was part of the editorial team and most ServiceWeb3.0 members have produced papers that were published in the book. The paper titled “The Service Web: a Web of Billions of Services”, by John Domingue, Dieter Fensel, John Davis, Rafael Gonzales-Cabero and Carlos Pedrinaci is one of the scientific papers in the book. The paper describes the use of four complementary technical advances that are integrated in order to create a coherent and domain independent service delivery platform. The four technologies include: (1) Service-oriented architectures and service-orientation principles that are being used to support the development of complex services based on distributed and reusable components, (2) Web principles and technology that are used to provide an underlying infrastructure that allows the integration of services at a world wide scale, (3) Web 2.0 that is used to structure human-machine cooperation in an efficient, user-adapted and cost effective manner and (4) Semantic technology is used to enhance service discovery, composition and execution.

## **2.2. “Towards the Future Internet – Emerging Trends from European Research” – FIA Book 2010**

### **2.2.1. Book overview**

The Future Internet Assembly will publish in 2010 a book titled: "Towards the Future Internet – Emerging Trends from European Research ", that will be edited by Georgios Tselentis, Alex Galis, Anastasius Gavras, Burkhard Stiller, Srdjan Krco, Volkmar Lotz, Elena Simperl, Theodore Zahariadis [2]. The book will contain high quality papers in all areas of research related to the Future Internet and in particular papers address cross-domain topics of the main thematic areas of the FIA, such as networking architectures, content networks, services and applications, interactions with the real world, as well as integral areas such as socio-economics, trust and identity, experimental research and large-scale testbeds.

The book contains as well submissions from industry covering both the state of practice and real-world experiences related to possible Future Internet design(s), as well as case studies from practitioners emphasizing applications, technology, system deployment, organizational ramifications, or business impact.

### **2.2.2. ServiceWeb3.0 contribution to this book**

ServiceWeb3.0 members have contributed substantially to FIA book 2010. STI Innsbruck is involved in editorial team of the book and most ServiceWeb3.0 members have produced papers that are to be published in the book. The paper titled “The Future of the Internet of Services for Industry: the ServiceWeb 3.0 Roadmap”, for example, authored by Lyndon Nixon, Dave Lambert, Agata Filipowska and Elena Simperl is one of the scientific papers accepted for publication in the book. The paper describes a number of challenges that must be address and future research directions that need to be explored in order to realize the Internet of Services part of the Future Internet. The paper presents the work done in the European Support Action ServiceWeb 3.0 to produce a specialized roadmap on Services in Industry. Drawing on expert opinions about the uptake of services and current R&D advances and timelines for service technologies taken from EU projects in the Future Internet activity, the authors seek to provide a framework for planning and co-ordinating future EU research as well as make recommendations to potential adopters of emerging service technologies.

## **2.3. Semantic Web Services Handbook**

### **2.3.1. Book overview**

The “Semantic Web Services Handbook”, by Dieter Fensel, Federico Facca and Elena Simperl [3] contains a comprehensive overview of the Semantic Web Services technologies. The goal of the book is to provide an insight into and understanding of the problem faced by Web services and service-oriented architectures, as well as the promises and solutions of the Semantic Web Services. The book discusses new emerging sciences such as Web Science and Service Science. It gives an overview of service technologies including WSDL/SOAP based services, Restful services and mobile services. The WSMO Framework, including the conceptual model WSMO, the family of languages WSML and the execution environment WSMX are described in details. The book contains as well a thorough analysis of other major approaches in Semantic Web Services (i.e. OWL-S, SWSF, etc.). Lightweight approaches for Semantic Web Services, including WSMO-Lite and Micro-WSMO are also described in the book. Last but not least a set of use-case are used to show the real benefit of Semantic Web Services in real world settings.



Figure 2. “Semantic Web Services Handbook”

### 2.3.2. ServiceWeb3.0 contribution to this book

ServiceWeb3.0 members have contributed significantly to “Semantic Web Services Handbook” book. The book is produced entirely by STI Innsbruck having a supporting role towards the Future Internet of Services. The topic of the book, Semantic Web Services technology, is one of the core pillars of Future Internet of Service. Detailed description of the state of the art of SWS technology and the possible extensions described as well in the book provide an overview and possible roadmap towards a Web of services.

## 2.4. Handbook of Semantic Web Technologies

### 2.4.1. Book overview

The “Handbook of Semantic Web Technologies”, edited by Dieter Fensel, John Domingue and James Handler [4] is a comprehensive reference work about the Semantic Web. It describes both fundamental research and major applications areas like bioinformatics, life sciences, business, education, and others. The book is ideal for researchers who need in-depth introduction into all areas related to Semantic Web research and applications. The need to leverage the potential of combining information in a meaningful way in order to be able to benefit from the Web will create further demand for and interest in Semantic Web research. This movement, based on the growing maturity of related research results, necessitates a reliable reference source from which beginners to the field can draw a first basic knowledge of the main underlying technologies as well as state-of-the-art application areas. The handbook, put together by three leading authorities in the field, and supported by an advisory board of highly reputed researchers, fulfils exactly this need. It is the first dedicated reference work in this field, collecting contributions about both the technical foundations of the Semantic Web as well as their main usage in other scientific fields like life sciences, engineering, business, or education.

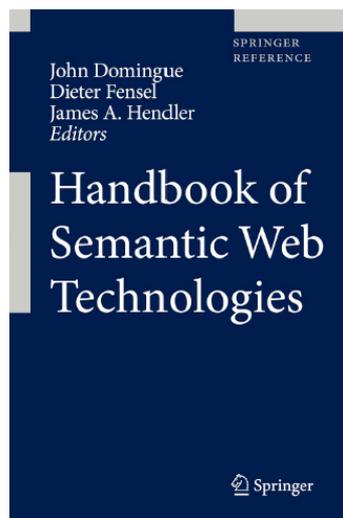


Figure 3. “Handbook of Semantic Web Technologies”

#### 2.4.2. ServiceWeb3.0 contribution to this book

ServiceWeb3.0 members, namely STI Innsbruck and Open University, have contributed substantially to “Handbook of Semantic Web Technologies” book. The topic of this book, namely Semantic Web technologies, is fundamental and could help in solving many of the challenges that need to be addressed to realize the Future Internet vision. ServiceWeb3.0, through its members STI Innsbruck and Open University, has contributed to the Future Internet by producing a reference book for semantics, one of the key enablers of the Future Internet. Detailed description of the state of the art of Semantic Web technology and the possible extensions described as well in the book provide an overview and possible roadmap towards a Web of services.

### 3. SUMMARY AND CONCLUSIONS

In this deliverable we have presented four books that were created with significant ServiceWeb3.0 support. We provided an overview of each of the books and we pointed out the ServiceWeb3.0 contribution to these books. Service Web 3.0 contributes to the Future Internet in their key competency areas: services and semantics. For these two topics we have produced reference books, aligned with the roadmaps, presenting the established, but also the latest hour results in the corresponding fields.

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