Information Technology and Law Series

Volume 30

Editor-in-chief

Simone van der Hof, eLaw (Center for Law and Digital Technologies),
Leiden University, Leiden, The Netherlands

Series editors

Bibi van den Berg, Institute for Security and Global Affairs (ISGA),
Leiden University, The Hague, The Netherlands
Gloria González Fuster, Law, Science, Technology & Society Studies (LSTS),
Vrije Universiteit Brussel (VUB), Brussels, Belgium
Eleni Kosta, Tilburg Institute for Law, Technology and Society (TILT),
Tilburg University, Tilburg, The Netherlands
Eva Lievens, Faculty of Law, Law & Technology, Ghent University,
Ghent, Belgium
Bendert Zevenbergen, Center for Information Technology Policy,
Princeton University, Princeton, USA

More information about this series at http://www.springer.com/series/8857

Bastiaan van Loenen · Glenn Vancauwenberghe
Joep Crompvoets
Editors

Open Data Exposed

ASSER PRESS

Springer

Editors
Bastiaan van Loenen
Faculty of Architecture
and the Built Environment
Delft University of Technology
Delft, The Netherlands

Joep Crompvoets
Public Governance Institute
KU Leuven
Leuven, Belgium

Glenn Vancauwenberghe
Faculty of Architecture
and the Built Environment
Delft University of Technology
Delft, The Netherlands

ISSN 1570-2782 ISSN 2215-1966 (electronic)
Information Technology and Law Series
ISBN 978-94-6265-260-6 ISBN 978-94-6265-261-3 (eBook)
https://doi.org/10.1007/978-94-6265-261-3

Library of Congress Control Number: 2018949338

Published by T.M.C. ASSER PRESS, The Hague, The Netherlands www.asserpress.nl
Produced and distributed for T.M.C. ASSER PRESS by Springer-Verlag Berlin Heidelberg

© T.M.C. ASSER PRESS and the authors 2018
No part of this work may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, microfilming, recording or otherwise, without written permission from the Publisher, with the exception of any material supplied specifically for the purpose of being entered and executed on a computer system, for exclusive use by the purchaser of the work.
The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

This T.M.C. ASSER PRESS imprint is published by the registered company Springer-Verlag GmbH, DE part of Springer Nature
The registered company address is: Heidelberger Platz 3, 14197 Berlin, Germany

Series Information

The *Information Technology & Law Series* was an initiative of IT*e*R, the national programme for Information Technology and Law, which was a research programme set up by the Dutch government and The Netherlands Organisation for Scientific Research (NWO) in The Hague. Since 1995 IT*e*R has published all of its research results in its own book series. In 2002 IT*e*R launched the present internationally orientated and English language *Information Technology & Law Series*. This well-established series deals with the implications of information technology for legal systems and institutions. Manuscripts and related correspondence can be sent to the Series' Editorial Office, which will also gladly provide more information concerning editorial standards and procedures.

Editorial Office

T.M.C. Asser Press
P.O. Box 30461
2500 GL The Hague
The Netherlands
Tel.: +31-70-3420310
e-mail: press@asser.nl

Simone van der Hof, *Editor-in-Chief*
Leiden University, eLaw (Center for Law and Digital Technologies)
The Netherlands

Bibi van den Berg
Leiden University, Institute for Security and Global Affairs (ISGA)
The Netherlands

Gloria González Fuster
Vrije Universiteit Brussel (VUB), Law, Science,
Technology & Society Studies (LSTS)
Belgium

Eleni Kosta
Tilburg University, Tilburg Institute for Law, Technology and Society (TILT)
The Netherlands

Eva Lievens
Ghent University, Faculty of Law, Law & Technology
Belgium

Bendert Zevenbergen
Princeton University, Center for Information Technology Policy
USA

Foreword

Open Data is a one-way street. You can't go back.
Jeff Stovall, CIO, Charlotte, North Carolina

Open data initiatives came on the scene just a decade ago. In December 2007, in Sebastopol, California, 30 open government advocates agreed on the—now—famous eight Open Government Data Principles. Soon after, the US and UK governments decided to include the topic in their political agendas. In January 2009, on his first day in office, President Barack Obama signed legislation promoting open government, while the first US and UK open data portals were launched to make public sector information (PSI) available in the form of "open data". At the same time, the European Commission started the review process of the 2003 PSI Re-use Directive and published a revised version in 2013.

However, the open data movement did not appear out of the blue just 10 years ago. Three areas provide a rich context. Freedom of information (FOI) is an area in which governments all over the world have been active for decades, some for centuries. The Swedish Freedom of the Press Act of 1766 guaranteed public access to government documents. Secondly, digital technologies gave a completely different dynamics to the generation, storage and at the same time access and dissemination of PSI. Lastly, the "openness" movement was quite influential in the early twenty-first century, promoting "open" in several areas including open source software, open standards, open knowledge/content and open science. The "open data" addition to this palette appeared rather natural, framing the FOI discussion for the digital era.

The expectations were high from the beginning. The early open data rhetoric could be summarised as "publish all your data in whatever way and, here it comes… transparency, growth, efficiencies and innovation". Using Gartner's hype cycle, the 2008–2014 period could be seen as the period of inflated expectations. Open data advocates believed that just by making government data available, we will automatically achieve open government. For this reason, pressure was put on public organisations to publish data. However, this happened in a supply-driven way, ignoring to a large extent real users, requirements and demand for open data.

Annoyingly, demand did not follow the supply. By the mid-2010s, we realised that although we had several hundreds of thousands of open data sets available via hundreds of portals maintained by public authorities at all administrative levels, i.e. on local, regional, national and European level, the demand, actual use and exploitation of open data were very low. Public agencies were doing—some better than others—their homework, but the promised benefits were not there. What was wrong?

Several hidden issues surfaced when the open data rhetoric hits reality:

- Governance. Open data should become part of the corporate information and data management plan. Although data is a valuable resource and as such it needs to be appropriately managed, we still lack policies for managing information inside public organisations. We need much more managing of open data as part of an overall corporate information management portfolio.
- Funding and costs. The initial enthusiasm underestimated the cost of publishing open data. There are direct costs related to the publication process and other important costs related to changing existing business models that are based on revenues for public agencies. On many occasions, upfront investments and long-term commitments of resources were not realistically estimated.
- Licensing and privacy. Licensing open data has proved to be complicated, while ambiguity in this area prevents reuse. Moreover, privacy issues seem to deteriorate with the advancement of de-anonymisation techniques.
- Usability. In a rather naïve way, it was thought that open data could be used directly by everyone, by all citizens and businesses. However, special skills are required for using and getting value out of open data. This skill set is often quite advanced as the published data most times suffers from low quality, inconsistencies and need demanding curation, cleansing, integration, etc.
- Ecosystems. Open data alone is not enough. Applications, communities, power users, standards, platforms play not just a supportive role but are prerequisites for value creation.
- Just opening data in any form and format is not enough. Specific policies for promoting publication quality and ensuring interoperability and compliance to standards are needed to avoid a Tower of Babel of open data. Advanced skills are also needed inside public organisations to support the entire open data life cycle from generation to exploitation.
- Global applicability and national specificities. The open data movement was born in an Anglo-Saxon context. Its application to other countries and continents revealed specificities and special characteristics based on cultural, institutional and organisational factors that need to be carefully considered. It is not always possible to just copy practices from one country to the other.
- Evaluation and assessment. It is very difficult to assess and evaluate in an objective and quantitative way, using validated and verifiable evidence, the value and impact of open data, with respect to transparency, efficiencies, innovation, job creation, etc.

With this extensive list of challenges, coupled with the (apparently) low use of open data, in the post-2015 era, agencies started questioning the open data return on investment. How to persuade budget holders to continue investing in something of which the benefits cannot be assessed, and usage is low despite considerable investments already having been made?

It seems that we may be moving towards the "trough of disillusionment". However, the first indications of a new level of maturity or the "slope of enlightenment" can be seen. Researchers, policy-makers and open data advocates are realising the limitations and are coming up with plans, proposals and ideas to overcome these limitations. The publication of this book with the topics it covers is a manifestation of the maturity of the discussion.

This book aims to expose the hidden issues as well as key aspects that have a relevance for opening data and to provide illustrative examples of how open data is implemented worldwide. It includes in-depth information about the historical background and the key components of open data, presents several interesting case studies on open data initiatives and infrastructures, and critically discusses the current and future developments in the open data ecosystem.

Open data alone may not be the Holy Grail for the public sector, but remains a very powerful tool with which to increase transparency, reduce costs, create new services and boost reuse/collaboration within the public sector and with the private sector. We now realise that it cannot come alone, and it needs a broader environment to thrive, coupled with crucial elements such as policies, planning, management, funding, prioritisation, standards, skills, awareness, assessment frameworks and legal clarity, just to mention a few. If we see open data not as a technology trend, but as a vital parameter of the Freedom of Information discussion shaped in the digital era, we can all agree that it is a one-way street. You cannot go back.

Thermi, Greece

Asst. Prof. Dr. Vasilios Peristeras
International Hellenic University

Contents

1 Open Data Exposed 1
Bastiaan van Loenen, Glenn Vancauwenberghe, Joep Crompvoets and Lorenzo Dalla Corte

2 Towards Open Data Across the Pond 11
Lorenzo Dalla Corte

3 Towards a User-Oriented Open Data Strategy 33
Bastiaan van Loenen

4 Funding Open Data 55
Frederika Welle Donker

5 Governance of Open Data Initiatives 79
Glenn Vancauwenberghe and Joep Crompvoets

6 Understanding Open Data Regulation: An Analysis of the Licensing Landscape 101
Alexandra Giannopoulou

7 The European Right to Data Protection in Relation to Open Data 127
Lorenzo Dalla Corte

8 Assessing Open Data 149
Glenn Vancauwenberghe

9 Technological Aspects of (Linked) Open Data 173
Stanislav Ronzhin, Erwin Folmer and Rob Lemmens

10 Open Data in the United Kingdom 195
Glenn Vancauwenberghe and Jamie Fawcett

11 The Development of Open Data in The Netherlands 215
Bastiaan van Loenen

12 Open Data in China 233
Mei Xue

13 One Data Indonesia to Support the Implementation of Open Data in Indonesia 247
Agung Indrajit

14 2050: The Story of Urbidata 269
Hendrik Ploeger and Bastiaan van Loenen