

Introduction

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As the second phase of the Emerging Impacts of Open Data in Developing Countries (ODDC) drew to a close, discussions started on a possible venue for publishing some of the papers that emerged from the research conducted by the project partners. In 2012 the Journal of Community Informatics published a special issue titled 'Community Informatics and Open Government Data'. Given the journal's previous interest in the field of open data, its established reputation and the fact that it is a peer-reviewed open access journal, the Journal of Community Informatics was approached and agreed to a second special issue with a focus on open data. A closed call for papers was sent out to the project research partners. Shortly afterwards, the first Open Data Research Symposium was held ahead of the International Open Data Conference 2015 in Ottawa, Canada. For the first time, a forum was provided to academics and researchers to present papers specifically on open data. Again there were discussions about an appropriate venue to publish selected papers from the Symposium. The decision was taken by the Symposium Programme Committee to invite the twenty plus presenters to submit full papers for consideration in the special issue. The seven papers published in this special issue are those that were selected through a double-blind peer review process.

Researchers are often given a rough ride by open data advocates – the research community is accused of taking too long, not being relevant enough and of speaking in tongues unintelligi-

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ble to social movements and policy-makers. And yet nine years after the ground-breaking meeting in Sebastopol at which the eight principles of open government data were penned, seven after President Obama injected political legitimacy into a movement, and five after eleven nation states formed the global Open Government Partnership (OGP), which has grown six-fold in membership; an email crosses our path in which the authors of a high-level report commit to developing a comprehensive understanding of a continental open data ecosystem through an examination of open data supply.

Needless to say, a single example is not necessarily representative of global trends in thinking about open data. Yet, the focus on government and on the supply of open data by open data advocates – with little consideration of open data use, the differentiation of users, intermediaries, power structures or the incentives that propel the evolution of ecosystems – is still all too common. Empirical research has already revealed the limitations of ‘supply it and they will use it’ open data practices, and has started to fill critical knowledge gaps to develop a more holistic understanding of the determinants of effective open data policy and practice.

As open data policies and practices evolve, the need to capture the dynamics of this evolution and to trace unfolding outcomes becomes critical to advance a more efficient and progressive field of research and practice. The trajectory of the existing body of literature on open data and the role of public authorities, both local and national, in the provision of open data is logical and needed in light of the central role of government in producing a wide range of types and volumes of data. At the same time, the complexity of open data ecosystem and the plethora of actors (local, regional and global suppliers, intermediaries and users) makes a compelling case for opening avenues for more diverse discussion and research beyond the supply of open data.

The research presented in this special issue of the *Journal of Community Informatics* touches on many of these issues, sets the pace and contributes to the much-needed knowledge base required to promote the likelihood of open data living up to its promise.

This special issue aims to discuss and critically reflect on these topics, while at the same time relating them to the overarching themes and global debates. Through empirical research based on primary data, in-depth case studies, and cross-country/sector research, the papers presented here delve deeper into the topic of open data ecosystems and enabling contexts to understand the interplay of open data attributes with context specific characteristics and actors, as well as the effects on open data outcomes.

The relevance of this issue is that it goes beyond current scholarly focus to map and analyse open government data policies, practices and ecosystems, towards a prescriptive analysis of how to essentially advance the open data movement by improving practices and deepening impact. Far from being behind the curve, the insights and discussions offer a forward-looking perspective on how to improve the application of open data and enhance its development outcomes.

A large attribute of the complexity of open data ecosystems lies in the diversity of actors, their interconnectedness and networked interactions. A richer depiction of open data supply chain emerges when such relations and interactions are mapped out and carefully analysed. In this context, we find that the role of data intermediaries in connecting agents in the data

supply chain and the associated innovations in this intermediary role to be important in unlocking the potential of open data. Van Schalkwyk, Canares, Chattapadhyay and Andrason in their paper 'Open Data Intermediaries in Developing Countries' provide a fresh perspective of how intermediaries are able to link agents in open data supply chains by using the theoretical framework of Bourdieu's social model. The underlying premise of this model is that there are various forms of capital needed for open data systems to function effectively. Among their main findings is that the presence of multiple intermediaries will likely enhance the use and impact of open data due to the different combinations of capital that these intermediaries are able to deploy in specific settings.

Equally important is the role of citizens and civil society in engaging with open data initiatives. Engagement is not limited to utilisation of data. It starts from the beginning of the supply chain and expands to include a whole range of interventions and actions that work to advance the open data movement and enhance its impact. Collective and networked action is a prominent feature in this discussion. McLeod and McNaughton's paper 'Mapping an emergent open data ecosystem' uses an actor network theory and a social network analysis lens to understand the application of open data in the tourism sector across five Caribbean countries. The focus of the paper is on the interrelationships between data supply and user elements. The insights provided are useful in understanding the dynamics of user engagement in any nascent open data system and how open data can progressively advance.

Frank and Walker in their paper 'User Centred Methods for Measuring the Quality of Open Data' offer a constructive evidence-based view of the relevance and applicability of a user-centered approach to measuring the quality of open data. The novelty herein is that it is a bottom-up approach to measuring the quality of data built on the user needs, more specifically the 'non-specialist user.' Their research, while offering lessons learned, triggers further questions on the role of data literacy and skills needed to enhance the impact of open data.

Another new avenue for research and theory-building is the emerging impact of open data practices in a developing country context. While there is evidence on the benefits of open data to social change and inclusion, innovation and economic benefit, and accountability and transparency, this growing body of research needs to be substantiated with evidence from different policy areas, sectors and contexts in developing countries. Responding to the scarcity of evidence on outcomes and impact of emerging open data practices is timely and needed to fill an important gap in the literature.

Within this line of thought comes the acknowledgement of the need to promote greater conceptual clarity on the benefits and risks of open data. One idea shaping this discussion is shifting from the linear path of research dominated by a supply and demand model towards a cyclical and interactive model. A fundamental characteristic of the latter model is the multiple entry points and interactions between actors and data infrastructures with decision-making processes and governance settings. This issue critically reflects on existing frameworks that capture impact and effects of open data, and looks at policy and open data linkages. In this case, Perini and Davies in their paper 'Researching the emerging impacts of open data' revisit the 2012 Open Data in Developing Countries (ODDC) conceptual framework to connect it with open data outcomes (inclusion, innovation and accountability). Through an embedded approach and case study research, the paper answers some key

questions pertaining to the dynamics of particular uses of data in influencing decision-making processes, and identifies pronounced contextual factors that can impact the realization of outcomes from open data.

In their paper ‘Open Government Data and Evidence-based Socio-economic Policy Research in India’, Buteau, Larquemin and Mukhopadhyay discuss the current status of the open government data initiative in India and critically examine the link between this data and research in India. In doing so, they survey researchers and academics and assess their awareness and use of government data. They pinpoint the challenges and provide recommendations of how to better influence policy-making through open government data in the Indian context.

Another critical dimension to the discussion on the evolution of open data is the specificity of local context. This is an additional benefit from conducting case studies and in-depth analysis. These offer an informed identification of the agents of change at the local level, and a nuanced understanding of their relations with other levels of government and stakeholders, the drivers and barriers to local open data systems and the role of institutional and historical settings. In their paper ‘Open Data and Sub-national Governments’, Canares and Shekhar undertake an analysis of sub-national open data environments in nine country cases. They find that despite the substantial efforts made by sub-national governments to disclose data, there are vast differences between local and national contexts in terms of the role of stakeholders in creating an enabling environment and how the data is used. In their paper ‘Enhancing Citizen Engagement with Open Government Data’, Canares, Marcial and Nasa dig deeper into the role of stakeholders through a case study approach that focuses on local Civil Society Organizations (CSOs) engagement with open government data in the Philippines. They provide a constructive view of how engagement of CSOs can be enhanced. Based on the analysis of the skills and capacity deficiencies obstructing the meaningful uptake of data by CSOs, the authors articulate a set of recommendations for an open data capacity- building programme that can unlock the actual data use by CSOs in the Philippines.

A common thread in most of the papers presented in this issue is the need to enhance capacities of citizens, CSOs and other stakeholders in the access and uptake of open data. Another underlying message is that technological capability is not a primary driver of effective open data practices, but other human, institutional and infrastructural requirements are just as important.

Reflecting on the diversity of open data-related topics covered by the papers collected in this special issue and notwithstanding the threads that have been identified post-selection, there are those who are likely to question the absence of a tidy framework or a palatable theory of change that may have ensured greater cohesion between the questions, approaches and findings in all seven papers. This is perhaps a reasonable request in an increasingly complex and bureaucratic world, and one not unfamiliar to the many researchers who depend on funding to ply their trade. But to straightjacket the activities of science —observation and experimentation— in bureaucracy is to risk diminishing its value and veracity for the sake of presumptive relevance, efficiency and tidiness. Devoid of an overarching theory of change but brimming with curiosity and committed to empiricism, each paper in this collection makes its own valuable contribution to the expanding knowledge base on open data. And this

commitment to advancing knowledge through experimentation and theory-testing should be encouraged. As Charles Leadbeater writes on what he describes as ‘the experimental life’:

One of the big divides across societies will be between experimentalists and traditionalists: between people who see the uncertainty of the modern world as a reason to innovate, try out new things, speculate and in the process create new identities for themselves; and those who see uncertainty as a reason to seek refuge in authority, order and faith in an effort to stay as they are.

Research as the fundamental process of scientific discovery may at times be messy and unpredictable, but with so many unanswered questions on the value of open data, any new truth-claims that move us forward -- incrementally and iteratively -- are invaluable in making the uncertain certain. The papers presented in this special issue represent a step forward. Our hope is that among the sponsors of research on open data there will be more experimentalists who will create the opportunities to sustain the forward momentum.

References

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