

Workshop Report

“Digital Revolutions: Assessing the Role, Influence, and Potential of New Information Technology Tools in 21st Century Politics and in Applied Research”

Chr. Michelsen Institute & University of Bergen

2 -3 November 2015

Hosted at CMI

Summary

This two-day workshop aimed to map out the field of various digital tools relevant to the study of social and political behavior; develop research questions to study the effects of these tools; and to assess the applied potential of digital tools as methods of data collection within social science research. A public panel event on day 2 at the University of Bergen brought together academics and practitioners in the field of digital activism to discuss key questions on these topics.

The objectives of this workshop were to:

- Identify research questions that can be channeled into future research projects and funding applications on the topics of:
 - The impacts of digital tools on social, economic, and political processes and events; and
 - Generating a more systematic understanding of the possibilities and limitations of new digital tools for research purposes.

- Identify possible collaborating partners for research projects, both for studying interventions and carrying out research.
- Laying the foundation for constructing a network of scholars and practitioners on the topic of digital tools and social science research.
- Identify possible research funding sources.

Background

What effects do communication technology tools have on shaping political events and processes? Recent years have seen the emergence of a number of new information technology tools such as big data and social media that have influenced social, economic, and political dynamics and outcomes worldwide. Social media applications helped to fuel the Arab Spring protests and regime turnovers in the region, influenced the peaceful outcome of the 2015 Nigerian presidential elections, and increased political participation in states around the world. Big data and mapping technologies helped to shape the international and domestic

political responses to the West African Ebola epidemic and the Nepalese earthquake, improved government responsiveness in public service delivery in rich and poor countries alike, and have assisted poor but resource-rich states to increase revenues from their natural resource sectors.

These new digital tools themselves represent a technological revolution, and are at the same time revolutionizing politics in many developing countries. They promise great potential for mobilizing people, ideas, and resources in new and profound ways that could contribute to improving the welfare of millions of people. Yet their very novelty also means that little knowledge exists about the conditions under which specific tools have particular types of effects, and what effects they may have in the future. These are important questions to answer, given that there are high expectations for – and many as-yet unproven claims about – the power of digital technologies to, among other things, increase democracy, improve citizen participation and human rights, and alleviate poverty.

DAY ONE

Session 1

Patrick Meier, independent consultant, made a presentation about “Humanitarians in the Sky” (HiS), a group that uses unmanned aerial vehicles (UAVs) for humanitarian purposes. Patrick presented the example of how HiS used UAVs in the aftermath of the Nepalese earthquake to create digitized maps about damaged infrastructure in Kathmandu. The data from the UAVs was used to create maps and 3-D models. These maps were printed out and brought to local communities, who discussed and annotated the maps and provided

additional information in a form of participatory, crowd-sourced community knowledge. Patrick emphasized that the Nepalese government had given permission to carry out this mapping exercise.

Nama Budhathoki, Director, of Kathmandu Living Labs, gave a presentation about the work of Kathmandu Living Labs (KLL). KLL cooperates with NGOs to do social mapping in urban and rural areas as well as with villages and women and girls groups. In the aftermath of the Nepalese earthquake, they coordinated with response agencies to carry out mapping work. Mappers (“citizen cartographers”) from all over the world collaborated to create maps that were used by organizations in the relief efforts, including the Nepalese Army. They were able to collect data that was used to assess infrastructure damage and could be used for planning reconstruction. Nama stressed that governments might respond differently to technological innovations depending on things like their bureaucratic structure and inertia.

Session 2

Morten Eriksen, CEO of Atlas Alliance, gave a presentation about the Global Disability mobile phone application, designed to help monitor and promote human rights and inclusion for persons with disabilities. This app will be like a “Trip Advisor” for persons with disabilities, and provide information and rankings about the accessibility and inclusion of specific geographic localities and services, and to enable users to share experiences. The app is currently a prototype. One issue the participants raised about digital tools such as mobile phone apps is that the incentives for users needs to be understood, as in many

developing countries there is an over-supply of apps and other technologies.

Pierre Beland, Humanitarian Open Street Map Team (HOT OSM), gave a presentation about how this team works and the challenges of the approach. OSM relies on volunteer mappers to assist in mapping areas during humanitarian emergencies. One problem that OSM faces is inexperienced mappers and the fact that there may be many mappers at the beginning of a crisis but that these numbers fall over time. Another challenge is how to coordinate the efforts of so many people and to collectively manage data.

Session 3

Bernardo Cocco, UNDP Policy Advisor, gave a presentation about the UNDP's Innovation Facility. This facility is a decentralized fund that is used to test new types of technological initiatives in developing countries that could be used to help achieve the global development goals. Some of these initiatives are for big data, mobile feedback mechanisms, and gamification. Examples of these initiatives include using mobile phones to report on corruption, to enhance protection and service delivery, to help understand migration patterns, to provide a warning for increases in violence, to crowdsource flood warnings, to report on infrastructure quality, and to promote participation. It should be remembered that the success of an intervention is context-specific. In terms of scaling up, this depends on UNDP having an open relationship with government, and there being funding and sufficient buy-in of the initiative.

Oludotun Babayemi, Connected Development (CODE), presented the work that CODE has been engaged in. One initiative that they were involved in

was monitoring election violence in Nigeria. CODE relied on volunteers to observe the recent elections and report on incidents of violence via SMS, in an effort to reduce violence. They partnered with a government agency (the Defense Intelligence Agency) to do this work. Reports were geo-located and messages validated. This campaign resulted in much less violence than the previous election. In CODE's "Follow the Money" project, CODE travelled to local communities to see if promised government programs and services were actually working and being provided, and when they were not, CODE would put this information on Facebook and Twitter to pressure the government to do what it promised for communities. This resulted in the release of promised government funds in one community. Olu noted that local context and knowledge are very important for understanding why digital tools produce certain results.

Session 4

Chris Weldon, CEO, Carterro, presented the work of Carterro (www.carterro.com), which is a mobile app designed to help teams to coordinate their work. Carterro is involved with the current refugee crisis, providing a private communication channel for migrants, allowing NGOs to communicate with each other and with team members, and to coordinate supplies. Usage of the apps depend on internet service. Carterro is custom built to provide information on money flows and maps that are useful for refugees as users drop pins about different types of information and events in geographical locations. The identities of users are kept private, and data is deleted when a communication channel is deleted.

Maria G. Jumbert, Peace Research Institute, Oslo, DIGICOM project,

presented a recent article that she and some co-authors had published on the digitalization of risk communication. Security technologies are being used in the humanitarian field, and technology is needed to provide humanitarian assistance, particularly remotely, and to know what is happening in a given area. Technology provides new opportunities for cooperation between public and private realms. Information is itself an aid commodity, and can shape aid delivery. However, there are vulnerabilities in data collection in terms of data and privacy protection. While technology enables participation from any location, not everybody does participate via technology, and mapping also reveals location and reinforces the idea of location, and thus can be traced. Know-how is needed to be able to use and process data. Data is often taken out of context and lacks explanation for why things are as they are. New risks come with technology, such as hacking, while governments may not be willing to respond to criticism delivered via social media. Border and people control and surveillance is enabled. The right data is more important than a lot of data, and data can be a liability if not used and stored properly.

Arne Strand, Deputy Director, CMI, provided a summary of the key take-aways of the day. The example of Nepal showed the interaction between local and international actors, and the importance of the local before international actors come into a place. It is necessary to work with governments, and trust often depends on the role of the government. What is possible in a place like Nepal with drones (UAVs) may not be possible in a place like Afghanistan. The question of whether the poorest can be reached via technology needs to be examined. The example of Disability Watch raises questions of whether general or catered

tools are appropriate for certain populations. How data and technology should be managed – by volunteers or in silos – should also be looked at. Technology and digital tools raise questions of democratic accountability, which the case of Nigeria and CODE's cooperation with the Nigerian security services raised. How to bridge the gap between those who can and cannot access technology is important to examine, including along lines of literacy, class, and rural/urban divides. Everyone can share, but who can verify information? The example of ISIS shows that warring factions can use and misuse technology, making us question what the truth is. Finally, he stressed the importance of thinking about the role and effects of digital tools in rule- versus relationship-based societies.

DAY TWO

Session 5

Martina Comes, Professor, University of Agder, discussed her research on the role of information in decision-making during disasters. Information is extremely important during crisis situations, but it changes constantly during crisis situations, technological approaches change disaster responses, and the role of information changes depending on the type of crisis. Information quality and the risk of misinformation is lower in natural disasters, whereas data sensitivity is an important issue in conflict situations since it can be impossible to separate strategic from political information. What is acceptable in terms of data "correctness" depends on the situation. Data availability also depends on the dynamics of the crisis situation. The example of information provision in the Ebola crisis was provided; during this situation, there was a desire

not to publish data on casualties so as to avoid public panic. Decision-makers may also avoid sharing information where mistrust pervades, particularly when there is no protocol for how to deal with sensitive information. More research needs to be done to examine how information is used during decision-making in crisis situations, and how information shapes responses.

Gregory Asmolov, London School of Economics, discussed his research on crowdsourcing tools in different political contexts, and the role of crowdsourcing platforms for emergency response, where technology, government, and citizens each play a role. Technology shapes the relationship between citizens and the external environment. The cases of crowdsourcing during wildfires in Australia and Russia were compared. Russia was characterized by hostility between the state and volunteers, as the government was concerned about independent intermediaries and volunteers as an uncontrolled force. The Russian state used crowdsourcing as a way to include volunteers and thereby control them through inclusion – a form of vertical crowdsourcing. In Australia, the opposite was true, with citizens driving crowdsourcing, producing horizontal crowdsourcing. The Australian state controlled the crowd through exclusion rather than inclusion.

Sarah Vieweg, Qatar Computing Research Institute, presented her research on how to make sense of the information generated via social media during crisis situations. She has examined the degree to which Tweets can provide useful, actionable information during a crisis by coding tweets to understand the language of these messages. Some linguistic challenges of tweeting as a medium of communication are that the

information conveyed in tweets is generally richer than what is expressed, that there can be more than one type of information conveyed in a tweet, and that a low percentage of tweets provide useful, actionable information during a crisis situation. No information in a disasters is ever truly verifiable, human coders are needed to determine the meaning of certain words and phrases, and local knowledge can be missed. Twitter must also be looked at as a conversation, not a one-way stream of information.

Andrew Mao, Microsoft Research, discussed a research study he is involved with that examines how people self-organize to carry out complex tasks, and how team size can determine successful collaboration. Mao's team studied the Standby Task Force and crisis mapping to understand the success of teamwork. Some of their findings include that the effort of individual team members diminishes over time; that accuracy of data mapping as well as collaboration increases with team size; and that individuals who work in teams exert less effort than working by themselves. However, as teams get larger individuals find it harder to contribute to teamwork. It is important to study the digital world as many social interactions are taking place online and between people who are far apart.

Per Aarvik, CMI and Standby Task Force, noted that many digital tools rely heavily on volunteers, but that these volunteers do not stay for long and it is hard to create a sustainable body of knowledge and skills. There has been an explosion of eager amateurs, and many volunteers have a strong emotional motivation for their engagement.

Session 6

The following questions were raised for future research and inquiry by the participants:

- Are the poorest being counted in the new digital paradigm? How can digital tools reach the poorest, and how can the poor contribute? Does technology increase the digital divide?
- What kind of digital tools are most appropriate for use in humanitarian work in developing countries?
- How to “localize” digital tools and organize local society in their use? What is the role of middle men and women in bridging between technology and local communities? How can digital tools and their products be used by communities, for instance after an emergency?
- How do we bring research closer to the field? Digital crowdsourcing is the frontier in social science, and there should be a way to fund more research with practical value.
- How can we extend digital organization to connect participants online with respondents on the ground? How can digital tools help to empower citizens to help themselves?
- What are the links between “ordinary” organizations and digital organization and mobilization?
- How will digital tools impact rule-versus relationship-based societies?
- How to compensate for bias in what data is produced via digital tools? For instance, Twitter only shows people with phones and internet access, and other data and users are missing.
- What is the role of diaspora communities in mapping and analysis?
- There is a need for research on the effects of digital tools beyond specific disasters.
- What are the incentives for users to use and participate in certain digital tools but not others?
- How is digital humanitarianism changing the paradigm of crisis management?
- How do digital tools empower people to act with or against the authorities? How do culture and context determine the effects of digital tools? How does context impact types of crowdsourcing (vertical versus horizontal)? What real impact can digital tools have where authoritarian governments are in charge?
- Why do governments respond to digital tools in the ways that they do? How do those who work with digital tools respond to government responses?
- Is data “verification” really worth the time and effort it receives?
- How do digital tools and data impact the way in which decisions are made in organizations? How useful are digital humanitarians in organizational decision-making? How do sense-making and decision-making reinforce each other in organizations?
- How and why does trust matter in the production and use of data and digital tools?
- Why are people motivated to participate as digital volunteers, for instance in digital humanitarianism?
- How can/should the accountability system in digital tools be re-organized?
- Can technology help to provide emotional support during disasters?

- How do we engage new contributors in online communities while retaining experienced ones over time?
- How do we evaluate and verify the data from crisis response?
- We don't know what works and where. Much more evidence needs to be produced to understand what effects digital tools have, and under what conditions.
- What are the negative impacts and dangers of digital tools, including increased surveillance, security, and corruption?
- What does a rights-based approach in technology-based disaster response look like?

Annex 1 – Agenda

Day ONE – Monday, 2 November 2015		
Time	Session & objectives	Speakers & Affiliation
09:00 – 09:30	<ul style="list-style-type: none"> Welcome and opening remarks Presentation of the aims of the workshop Participant introductions 	<ul style="list-style-type: none"> Kristin Strømsnes, Professor, University of Bergen Dept. of Comparative Politics
09:30 – 10:30	<p>Session 1: Real-time view of the world</p> <p>Maps have become personalized, interactive, constantly updated with layers of imagery, live video-streams and geographically located reports from the ground.</p> <ul style="list-style-type: none"> How are maps used, and useful? Can we digest the flow of information? How is this information used during crisis: for governance and accountability, evaluation and monitoring, or for other purposes? 	<ul style="list-style-type: none"> Nama Budhathoki, Director, of Kathmandu Living Labs Patrick Meier, Qatar Computing Resource Institute (QCRI) Pierre Beland, Humanitarian Open Street Map Team
10:30 – 10:45	Coffee Break	
10:45 – 12:30	<p>Session 2: Related case studies</p> <ul style="list-style-type: none"> Tripadvisor for the Disabled How UNDP Innovation Facility deploys new data and methodology 	<ul style="list-style-type: none"> Morten Eriksen, CEO, Atlas-Alliance Bernardo Cocco, Policy Advisor, UNDP
12:30 – 13:30	LUNCH	
13:30 – 14:15	<p>Session 3: Digital Participation</p> <p>There are numerous examples of how digital tools enables participation from local and global communities during crisis, elections or in monitoring projects.</p> <ul style="list-style-type: none"> How does this function? What can be the pitfalls or dangers when diverse groups communicate and take part in important events? Case studies from election monitoring. 	<ul style="list-style-type: none"> Oludotun Babayemi, Connected Development (CODE) Maria G. Jumbert, PRIO, DIGICOM project
14:15 – 14:30	Coffee Break	
14:30 – 16:00	<p>Session 4:</p> <ul style="list-style-type: none"> Digital tools for crisis management Does participation from the "crowd" alter the perception or evaluation of an event? 	<ul style="list-style-type: none"> Chris Weldon, CEO, Carterro
16:00 – 16:15	Close for the day – reflections on key points	
		<ul style="list-style-type: none"> Arne Strand, Deputy

	and questions raised, lessons learned	Director, CMI
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Day TWO – Tuesday, 3 November 2015		
Time	Session & objectives	Speakers & Affiliation
09:00 – 09:30	<ul style="list-style-type: none"> Reflections from yesterday Key points to try to address today 	<ul style="list-style-type: none"> Kendra Dupuy, CMI
10:00 – 12:30	<p>Session 5: Digital Organization Revolutions</p> <p>Online tech communities and civil activists display innovative uses of the collaborative tools.</p> <ul style="list-style-type: none"> How are formal responders and researchers interacting with new players in coordination and organization? How do power structures look like in this new landscape? How can online communities collaborate in practice? 	<ul style="list-style-type: none"> Tina Comes, University of Agder Gregory Asmolov, London School of Economics Sarah Vieweg, QCRI Andrew Mao, Microsoft Research Per Aarvik, CMI and Standby Task Force
12:30 – 13:30	LUNCH	
13:30 – 15:00	<p>Session 6: The Way Forward</p> <ul style="list-style-type: none"> Summary of what has been learned and questions raised for research What are the knowledge gaps? What are the interesting questions? For whom, and for what ends? How can researchers and practitioners collaborate? What are interesting data sources? How can technology be used in research – new methodological tools? 	Kendra Dupuy, CMI
18:00 – 20:00	<p>PUBLIC PANEL EVENT</p> <p>How to Make Sense of a Billion Tweets?</p> <p>Location; Egget, Studentsenteret. Parkvn 1</p> <p>What are the possibilities, problems, and paths for digital technology tools in social science research?</p>	<ul style="list-style-type: none"> Kendra Dupuy, CMI – moderator Panel participants: Tina Comes, HHI Oludotun Babayemi, CODE Gregory Asmolov, LSE Pierre Beland. HOT OSM Maria G. Jumbert, PRIO