Role of Big Data in Increasing Security and Resilience to Catastrophic Events

George Washington University, City View Room
1957 E Street, NW, 7th Floor, Washington D.C 20052
May 21, 2014

Mission & Workshop Objectives

To empower citizens and infrastructure providers, solicit policy maker input and enable responding entities to effectively prepare for catastrophic events by prioritizing search, rescue, response and restoration efforts after an event; and exploring the creation of a public-private partnership(s) focused on catastrophic resilience, data analytics, information exchange and informed response.

To this end, the workshop will address the following questions:

1. What information and big data, which is typically owned and controlled by private sector entities and non-profit aid organizations and not currently shared with responding entities, has the potential to enable a more effective preparedness for and response during and after catastrophic events by addressing information gaps?

2. How can big data and big data analytics be leveraged to provide actionable information to citizens and infrastructure owners and operators before, during, and after a catastrophic event to mobilize and empower them to effectively prepare and respond?

3. How can critical infrastructure owners and operators leverage, use and consume data from multiple sources to mitigate, protect against, respond to, and recover from potentially catastrophic events?

4. What policy, technological, legal or other real and perceived barriers exist which prevent sharing of such information?

5. What are the pros and cons of creating a public-private partnership to address the identified barriers and gaps and to enable the sharing of the identified information? Who are the main actors in this context and what actions do they need to take?

Agenda

8:30 – 8:45  Registration, Networking and Breakfast
8:45 - 9:15  Welcome & Introductions
             Frank Cilluffo, Associate Vice President for Homeland Security at the George Washington University, Director, Homeland Security Policy Institute
             Mark Dalton, Chief, Information Services Branch, UN OCHA
             Kirstjen Nielsen, President, Sunesis Consulting, Member, Global Agenda Council for Catastrophic Risk

9:15 - 9:45  Keynote Address: New Approaches to Security and Resilience
             The Honorable Tom Ridge, President, Ridge Global, former Secretary of Homeland Security

9:45 - 10:30 Panel 1: Framing the Challenge: What Information Gaps Hinder Preparedness Activities?
Our first panel will explore how preparedness efforts, including protection, response and recovery efforts, have been hindered by gaps in information, such as gaps in the information’s substance, accuracy, timing and/or analysis.

**Moderator:** Kirstjen Nielsen, President, Sunesis Consulting, Member, Global Agenda Council for Catastrophic Risk

**Panelists:**
- Scott Aaronson, Senior Director, National Security Policy, Edison Electric Institute
- Katie Fox, Acting Director, National Preparedness Directorate, Federal Emergency Management Agency
- Daniel Gilman, Humanitarian Affairs Officer, Policy Analysis and Innovation Section, OCHA

10:30 - 10:45 **Coffee Break**

10:45 - 11:30 **Big Data: Possibilities, Problems, and Paradigms**

The second panel will review what data is currently being used by the public, private and non-profit sectors and look at the potential of big data and big data analytics to increase security and resilience. The panelists will discuss new data sets, technologies and approaches and explore how data typically created and used for enabling the Internet of Things or created through mobile phone applications could be helpful to preparedness efforts.

**Moderator:** Paul Nicholas, Senior Director, Trustworthy Computing, Microsoft

**Panelists:**
- Brian Fishman, counterterrorism research fellow, New America Foundation, Fellow, Combating Terrorism Center (CTC) at West Point, and Philanthropic Engineer, Palantir Technologies
- Robert Kirkpatrick, Director, UN Global Pulse, Executive Office of the Secretary General (invited)
- Dr. Erik Wetter, Co-founder, Flowminder

11:30 - 12:15 **Big Data in Action: Typhoon Haiyan (Philippines), 2010 Earthquake (Haiti) and Superstorm Sandy (U.S.) Case Studies**

Our third panel will review three recent catastrophic events and discuss both how the lack of data hindered the related response efforts and how information was leveraged to effectively respond and recover. The panelists will look at the differences in the need for and use of big data in hyper-connected societies and those with limited network infrastructure. The panel will also feature work being undertaken by UN OCHA on data standards and consider its applicability to the case studies in question.

**Moderator:** Steven A Zyck, Research Fellow, Humanitarian Policy Group

**Panelists:**
- Wendy Harman, Director, Information Management and Situational Awareness, American Red Cross
- Brad Kieserman, Acting Assistant Administrator for Recovery, Office of Response and Recovery FEMA (invited)
- Kyla Reid, Head, Disaster Response, GSMA Mobile for Development
- Sarah Telford, Senior Program Officer, Office of the Director, Corporate Programs Division, UN OCHA
12:15 - 1:30  Networking Lunch and Keynote Speech
Mark Gembicki, Chairman and Chief Architect, Resilient Corporation

1:30 - 2:30  Breakout Option 1: Policy, Privacy and Legal Barriers to Use and Sharing of Big Data for Catastrophic Resilience
A facilitated discussion of the policy, privacy, civil liberties, and liability concerns and potential legislative restrictions to sharing the types of data needed to build security and resilience to catastrophic events.
Facilitator: Kirstjen Nielsen, President, Sunesis Consulting, Member, Global Agenda Council for Catastrophic Risk

Breakout Option 2: Technological Barriers to Using Big Data in Response and Recovery
A facilitated discussion on whether technology is currently available to leverage and utilize big data for disaster response and recovery. Just as importantly, do we have the skillsets available across the communities involved to analyze, understand and use the data?
Facilitator: Paul Nicholas, Senior Director, Global Security Strategy and Diplomacy, Microsoft

Breakout Option 3: Big Data Analytics and the Importance of Modelling for Community Preparedness
A facilitated discussion on available methodologies for examining and applying data and an assessment of current gaps and needs for mitigation and protection.
Facilitator: Dr. Patrick Meier, Director of Social Innovation, Qatar Computing Research Institute

2:30 - 2:45  Public Private Partnership, Big Data and Security Resilience
Alan D. Cohn, Assistant Secretary for Strategy, Planning, Analysis & Risk, US Department of Homeland Security

2:45 - 3:30  Discussion in Breakout Groups: Public Private Partnerships as a Way Forward
A facilitated discussion in three different breakout groups on the potential role of public-private partnerships in addressing the use of big data to increase security and resilience to catastrophic events. What needs to be put in place for this effort to succeed? Who should be involved? What would be the roles and responsibilities of the partners?
Facilitators:
Dr. Matthew Fleming, Fellow, Homeland Security Studies and Analysis Institute
Robert Kolasky, Senior Advisor and Director Strategy and Policy, Office of Infrastructure Protection, US Department of Homeland Security
Paul Nicholas, Senior Director, Global Security Strategy and Diplomacy, Microsoft

3:30 - 3:45  Coffee Break

3:45 - 4:45  Today's Findings: Report form the Breakout Sessions
Moderator: Frank Cilluffo, Associate Vice President for Homeland Security at the George Washington University, Director, Homeland Security Policy Institute
Panelists:
Dr. Matthew Fleming, Fellow, Homeland Security Studies and Analysis Institute
Robert Kolasky, Senior Advisor and Director Strategy and Policy, Office of Infrastructure Protection, US Department of Homeland Security

Dr. Patrick Meier, Director of Social Innovation, Qatar Computing Research Institute

Paul Nicholas, Senior Director, Global Security Strategy and Diplomacy, Microsoft

Kirstjen Nielsen, President, Sunesis Consulting, Member, Global Agenda Council for Catastrophic Risk

**4:45 - 5:00 Concluding Remarks**

Paul Nicholas, Senior Director, Global Security Strategy and Diplomacy, Microsoft

Kirstjen Nielsen, President, Sunesis Consulting, Member, Global Agenda Council for Catastrophic Risk