2023

THE GOVERNANCE OF NEW AND EMERGING TECHNOLOGIES

+ Policy Virtual Symposium – Report
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Symposium Overview

On April 6th, 2023 the [+Policy Network](#) of Virginia Tech hosted an online conference devoted to discussing the governance challenges of new technologies.

The conference, led by Assistant Professor of Sociology Dr. Maaz Gardezi, brought together faculty from diverse backgrounds and disciplines to share their perspectives regarding the ways that new and emerging technologies will affect groups of citizens and technology users during four panel discussions.

The conference gathered experts from various fields to address challenges stemming from new technology development across sectors like healthcare, energy, environment, and food and agriculture. Panelists explored effective technology governance involving academia, civil society, governments, and developers.

Panel 1:

FOOD AND AGRICULTURAL TECHNOLOGY GOVERNANCE

Panelists emphasized the recent digitalization of the food and agriculture sector through technologies like blockchain, sensors, and machine learning. While these innovations hold potential for increased food production and reduced environmental impact, they raised questions about regulating big agricultural data and the potential disparities between agribusinesses and smaller farms.

The panelists argued that any governance of big data and artificial intelligence in the food and agriculture sector needs to acknowledge that farming is context specific and knowledge intensive. This means that farmers' local knowledge of their farm, farming input, and ecology, should be situated at the front and center of technological development and governance.

Regulation of big data and AI in agriculture would have to balance the needs, expectations, and perceptions of a wide range of stakeholders across the food system value chain.

Panelists included:
- Dr. Brianna Posadas (School of Plant and Environmental Sciences)
- Dr. Saul Halfon (Science, Technology, and Society)
- Dr. Jessica Agnew (College of Agricultural and Life Sciences- Global)
- The panel was moderated by Dr. Maaz Gardezi (Sociology).

Panel 2:

HEALTHCARE
TECHNOLOGY GOVERNANCE

This panel highlighted the role played by the transparency of the models used in health care and the ways governance can help to reduce the negative effects of biased and unreliable models.

The inclusion of individuals who are users or are affected by emerging technologies in the healthcare sector is a key factor to ensure that models will not carry biases that are part of the training models of the algorithms that define the effects of new data-based technologies.

Panelists included:
- Dr. Sarah Parker (Fralin Biomedical Research Institute at Virginia Tech Carilion School of Medicine)
- Dr. Hoda Eldardiry (Computer Science)
- The panel was moderated by Dr. Max Stephenson Jr. (School of Public and International Affairs)

Panel 3:

ENVIRONMENT AND ENERGY TECHNOLOGY GOVERNANCE

The panelists and moderator had a conversation related to anticipation and preparedness in terms of technology governance and how disruption to current physical and social structures can affect the day to day lives of people and companies when risks are not managed well.

They also discussed ways to ensure that inclusion and access can effectively promote better distributional effects in terms of the benefits of new and emerging technologies. The panel also addressed how governance is affected by technologies and the ways that new technologies could involve themselves into governance arrangements like agricultural insurance or energy usage.

Panelists included:
- Dr. Elinor Benami (Agricultural and Applied Economics Department)
- Dr. Christopher Zobel (Pamplin College of Business)
- Dr. Daniel Breslau (Department of Science, Technology, and Society)
- The panel was moderated by Dr. Maaz Gardezi

Panel 4:

PUBLIC INTEREST AND CYBER SECURITY TECHNOLOGY GOVERNANCE

The panelists discussed the relevancy of designing technologies with diversity and public goals in mind and moving beyond the traditional ways driven by private-interest technology development.

They also talked about the range of governance articulations that can affect emerging technologies aimed at the public interest and reinforced the need for more work into developing and understanding the connections between institutional-based governance, private sector or individual governance and governance with or for the people.

Panelists included:
- Dr. Sylvester Johnson (Center for Humanities)
- Dr. Brendan John (Computer Science)
- Dr. Shalini Misra (Urban Affairs and Planning)
- The panel was moderated by Rishi Jaitly (Center for Humanities)

THREE LESSONS FOR EFFECTIVE AND INCLUSIVE TECHNOLOGICAL GOVERNANCE

LESSON 1:

A relevant issue that was raised in these conversations was the traditional tension between the need for technological advancement and for regulation in spaces where there are power imbalances and possibilities of harm.

Precaution has many times been featured as having potential societal benefits in terms of managing uncertainty and risk and has been seen as having potential chilling effects of on innovation due to over-regulation (Weiner). The challenge for policymakers and researchers is to find a way to balance things just right.

They need to navigate between different possible situations and the discussions that can push things too far in one direction or the other. Based on the conversations from the panels, a critical, hopeful, grounded, diverse, and responsible approach towards technology development is needed so that risks can be minimized, and the benefits of technology can be distributed equitably.

LESSON 2:

In relation to the previous topic, all the conversations addressed the importance of tackling the inherent complexity of technology governance through multidisciplinary approaches and the panelists shared their experience while engaging in this kind of work.

A common reflection from the panels was that incorporating diverse approaches into the analysis of emerging technologies helps stakeholders to identify risks and benefits that could be missing from traditional approaches to technology governance, and caring for inclusion and diversity helps technology developers to ensure that their ideas and innovation are grounded in common agreements of societal goals and norms.

LESSON 3:

Managing the complexity and uncertainty derived from emerging technologies under inclusive and responsible governance arrangements requires a multiplicity of lenses. In this regard, the panels showed the different ways that Virginia Tech and its academics can engage with governance of new and emerging technologies thanks to the expertise of its scholars and the diverse lenses they bring to the topics they study.

Fostering interdisciplinary work related to governance of new and emerging technologies, promoting academics to work together between disciplines, but also transdisciplinary work with partners beyond academia it´s most likely to be the defining goal that will connect academic work with the governance and regulation of new technologies.

Finding ways to maintain and scale up that work, finding points of convergence between lines of works, disciplines, and individuals will be something that will require constant processes of bringing together people and organizations (across the public and private sectors) that care about the analysis, development, and promotion of new technologies.

REFERENCES

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