

AI Futures Policy Lab: Toronto Pilot Summary

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AI FUTURES POLICY LAB: TORONTO PILOT

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On June 25, 2018, Canadian Institute for Advanced Research (CIFAR) and the Brookfield Institute for Innovation + Entrepreneurship (BII+E) hosted an AI Futures Policy Lab in Toronto. This lab was designed to facilitate capacity building for emerging policy leaders, both within and outside of the civil service, by encouraging critical thinking surrounding a number of possible future AI scenarios based in 2028. In order to create an intimate space that enabled thoughtful collaboration and information sharing, attendance was capped, with total of 18 participants present on the day. The workshop incorporated foresight exercises with brainstorming activities to develop contemporary AI policy approaches in a variety of domains. The agenda is provided in Appendix A. This was the first in a series of five workshops that will take place across Canada throughout the remainder of 2018.

POLICY LAB ACTIVITIES

1. THE AI THING FROM THE FUTURE

The workshop kicked off with a card game, *The 'AI' Thing from the Future*¹. The purpose of this activity was to encourage participants to be creative and set the tone for the proceeding exercises throughout the day, which pushed attendees to think beyond our current reality. Participants split into four groups of five, each accompanied by a facilitator. Each group was then given five cards, each containing a different prompt: *ARC*, to signify what type of future; *terrain*, defining the thematic context or location of the object; *object*, specifying the type of artifact you are focusing on; *mood*, suggesting how you might feel when experiencing this thing; and *AI*, indicating the technological capability or application that needs to be integrated in your future “thing” (Appendix B).

Each participant was provided with a template (Appendix C) to record their idea. Participants were required to individually imagine a future object, or ‘thing’, utilizing all card prompts. Each participant then had the opportunity to share these ideas with the rest of the group.

2. AI 101

Following this exercise, participants were joined by Katya Kudashkina, a researcher from the Vector Institute, who defined common AI terms, described learning techniques, and provided expert knowledge on AI applications across a variety of fields. Participants were able to ask questions and receive clarity from a professional working in the area of AI. This provided attendees with knowledge and resources to draw on for subsequent activities.

¹ Adapted from Stuart Candy and Jeff Watson (Situation Lab)

3. FUTURE AI SCENARIOS: CANVAS EXERCISES

Participants were divided into pre-assigned groups, curated with the purpose of bringing together individuals from different policy domains. Each group was joined by a facilitator who presented 3-4 case studies. Groups were given 10 minutes to select one case study, which would become the focus for the subsequent three exercises. Each case study card was

developed to reflect a possible AI scenario in 2028, ranging from prescriptive legal analytics to smart homes.

The following four case studies were addressed during the workshop, each by a different group:

Automated Hiring

Automated assessments of job applications are becoming increasingly popular. In-person interviews are recorded on camera. Using computer vision, companies are now able to assess barely perceptible changes in posture, facial expression, body temperature, and vocal tone, and score interviewees in relation to data collected from existing top-performing employees.

Prescriptive Legal Analytics

Judge Insights, an online platform, collects and analyzes historical behavioural information about Canadian judges, and offers lawyers predictions on how a particular judge would act in a particular court case.

Lawyers fill out an online template with information about their client and the case, and the judge's past decisions, and the algorithm provides likely outcomes and recommended approaches. In doing so, lawyers can gain insight into the best course of action for presenting evidence in court, convincing the judge, and influencing the jury.

Predictive Life Insurance

A life insurance company purchases health data from fitness applications (e.g. Fitbit, MiCoach, Strava). It implements a predictive algorithm to determine insurance premiums based on the data collected.

Individuals are scored based on the amount of healthy activity they engage in (e.g., the number of steps taken per day, heart rate level, sleep duration).

Individuals with high scores are awarded lower premiums than those who engage in less activity and get less sleep.

Mining

Mining companies are applying machine learning based on interconnected and frequently proprietary data sources to improve mineral exploration and identify mineral deposits with near perfect accuracy. These companies are also using robots, telepresence, and smart sensors to enhance productivity. Autonomous trucks and drills are deployed that can operate 24/7 and reduce costs relative to human operations.

Once the case studies were selected, groups received the first canvas (appendix C), prompting them to consider the following issues:

- + who would be affected in this future AI scenario and how;
- + the impacts it would have at both the local and global level (using a STEEPV approach); as well as
- + what policy domains would be affected and how.

Each group was given 45 minutes to collaboratively fill out the canvas. Once the time elapsed, groups gave a quick overview of their case studies and the ensuing deliberations.

After lunch, participant groups were presented with the second canvas (appendix D), structured as a backcasting exercise. This activity required participants to map

specific developments expected to occur between 2018 and 2028 that were needed to make their AI future scenario a reality. This exercise was also structured using the STEEPV framework. Participants were encouraged to openly discuss each category.

Upon completion of the second canvas, each group was given the third and final canvas (appendix E), as well as a deck of cards. Each card represented a different style of government intervention that could be applied in relation to the future AI scenario. Sample cards shown below:



Cards were designed in reference to the UK Policy Lab's matrix of government interventions (appendix F), which highlights informal and formal policy levers.

4. TOOLKIT DEVELOPMENT

Groups were then given the opportunity to reflect on the day's discussions with the goal of formulating a "toolkit". The aim of creating this resource was to outline what questions to ask or considerations to take when assessing the potential use and implications of an AI technology in a particular policy domain.

INSIGHTS

While the workshop was not intended to develop recommendations for actions, there were some common approaches and themes that arose across groups:

- + While AI developments will require new policy solutions, the policy process wasn't seen to require drastic change
- + There is considerable value in convening multi-stakeholder groups early in the policy process
- + Where possible, it is worthwhile to consider the entire spectrum of policy levers and begin with lighter touch options
- + It is important for all affected stakeholders to better understand the specifics of a given AI implementation, rather than its technology in the abstract

GENERAL REMARKS

Participant feedback indicated that it was beneficial to have the opportunity to collaborate with fellow professionals in the policy space. Additionally, many attendees highlighted the foresight approach as a useful framework for thinking through future policy implications of AI and the type of government responses necessary today. However, participants also expressed a desire for more introductory presentations on AI to help ground discussions, and suggested that it would be valuable to discuss real-world AI use cases, as opposed to hypothetical future scenarios. Additionally, feedback noted that having more attendees from other sectors (e.g. private, not-for-profit, and academic) would contribute positively to the collaborative experience. Overall, this workshop empowered attendees to ask critical questions regarding AI techniques, applications, and potential policy implications.

NEXT STEPS

In September, CIFAR and BII+E will host the second AI Futures Policy Lab in Edmonton, Alberta. Taking into account the feedback from the Toronto Pilot event, a new agenda has been designed to incorporate more introductory presentations, as well as the analysis of existing AI applications, alongside future scenarios. This lab will also require participants to formulate policy briefs with the aim of generating greater awareness of current AI capabilities and applications, as well as the necessary and applicable government responses.



APPENDICES

APPENDIX A: AGENDA

Time	Total Time	Activity
8:30am	30 min	Light Breakfast + Networking
9:00am	30 min	Opening Remarks
9:30am	30 min	Introductions + Warm Up Game
10:00am	60 min	AI 101 This session will be hosted by Katya Kudashkina from the Vector Institute. She will be providing expert knowledge about AI technologies. During this session we will be defining AI terms that will be frequently used in conversation throughout the day. There will be an opportunity to ask questions.
11:00am	15 min	Break
11:15am	60 min	Scenario Part 1 - Examining AI in 2028 Everyone will be assigned to a breakout group for this session. We will provide future scenarios to examine stakeholders impacted and implications.
12:15pm	45 min	Lunch
1:00pm	15 min	Additional Q&A with Katya
1:15pm	45 min	Scenario Part 2 - Backcasting We will continue to work through the case study to explore how we got to 2028.
2:00pm	60 min	Scenario Part 3 - Taking Action Today (2018 - 2020) This session will be focused on the identifying government interventions to respond to your given scenario.
3:00pm	30 min	Toolkit Development We will collaboratively develop a list of questions to explore for any new AI scenarios that you come across in your policy domain.
3:30pm	15 min	Wrap Up + Evaluations
3:45pm	60-90 min	Close and social

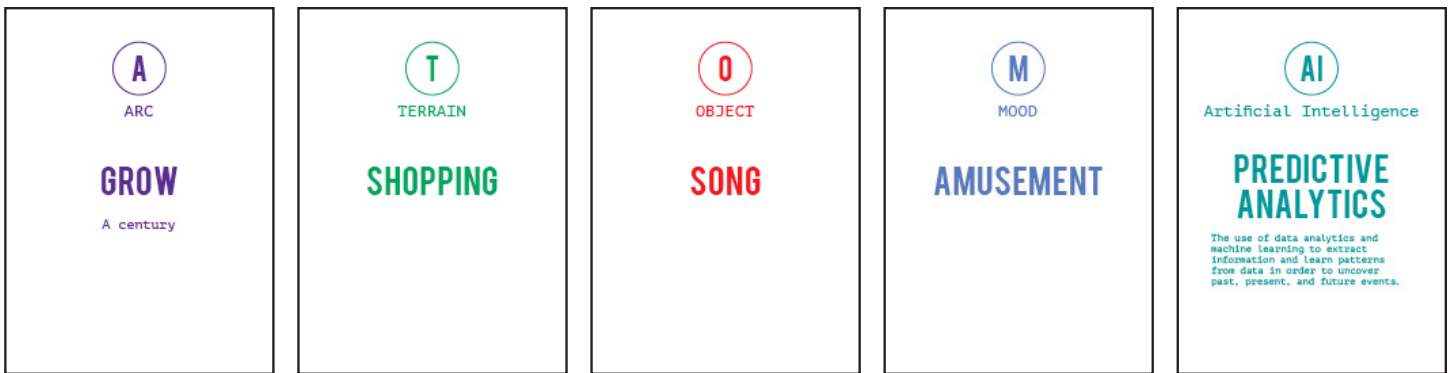
APPENDIX B: THE AI THING FROM THE FUTURE KEY

ARC outlines the type of future that the “thing” comes from, and how far away it is from today. There are four types of Arc cards, each an umbrella for countless possible scenarios:

- 1 *Growth*: a future in which “progress” has continued
- 2 *Collapse*: a future in which society as we know it has come apart
- 3 *Discipline*: a future in which order is deliberately coordinated or imposed
- 4 *Transformation*: a future in which a profound historical evolution has occurred

TERRAIN is the thematic context or location where this object could be found in that future. *OBJECT* is the focus of your imagination - a specific cultural artifact that reveals something about how this future is different from today. *MOOD* suggests how it might feel to experience this thing from the future. *AI* indicates the technological capability or application that needs to be integrated in the artifact you create.

As an example, imagine you are presented with the five cards below:



These cards point towards a future in which progress has continued, in the domain of shopping, with the focus being a song, accompanied by a feeling of amusement, and the use of predictive analytics. In imagining a thing associated with the prompts on these cards, you may think that a century from now, there will be fitting rooms that predict which songs you like to hear while you are shopping. This will help elevate the experience by leaving you with the feeling of amusement.

THE AI THING FROM THE FUTURE



1) YOUR CARDS

<div>ARC</div> <div><div></div><div></div></div>	<div>TERRAIN</div>	<div>OBJECT</div>	<div>MOOD</div>	<div>AI</div>
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2) DESCRIPTION

3) SKETCH

Adapted from Situation Lab (Stuart Candy and Jeff Watson)

Case Study:



Canvas #1: 2028

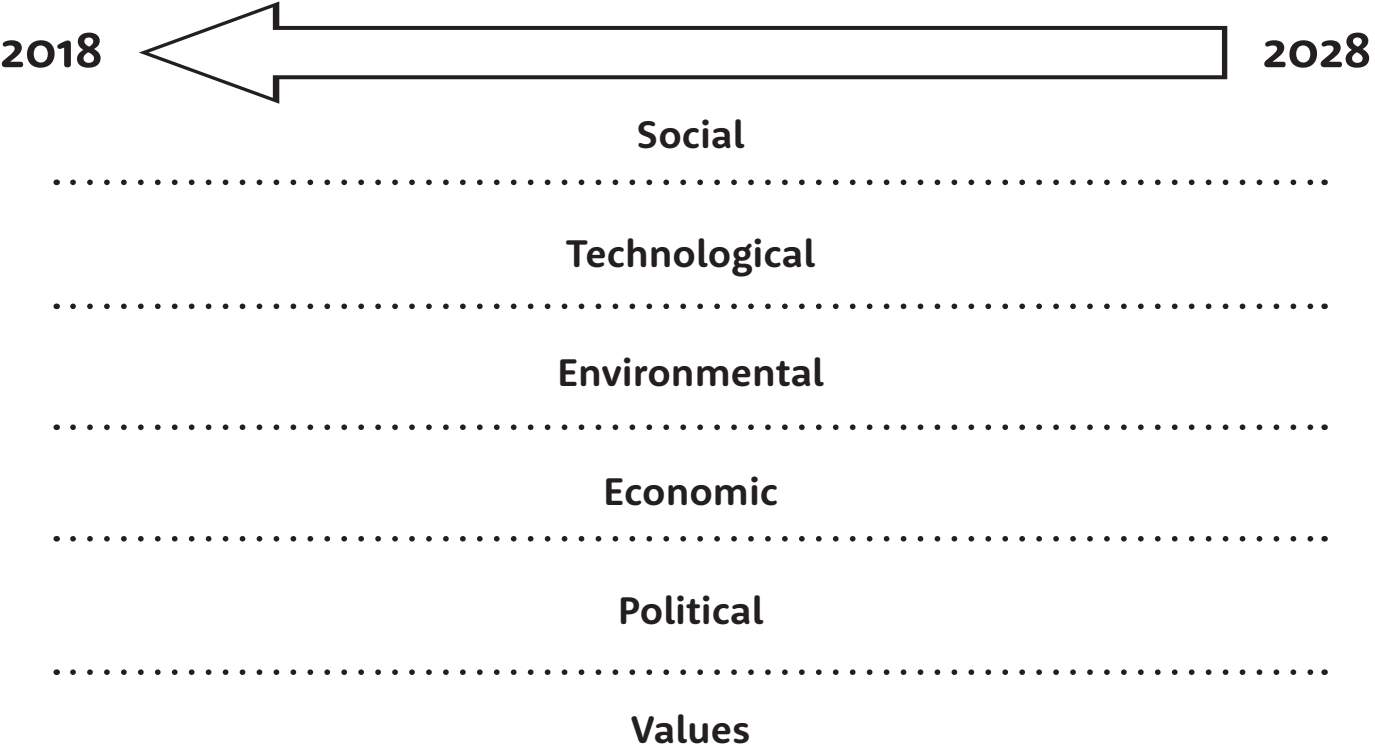
<div>1</div> <div>What excites you about this topic?</div>	<div>3</div> <div>How are different groups experiencing both positive and negative effects? Are the groups growing, shrinking, new, or extinct?</div> <div><div>?</div><div>+</div><div>-</div><div>Δ</div></div>	<div>5</div> <div>What policy domains are affected? What opportunities exist? What challenges?</div>
<div>2</div> <div>What concerns you about this topic? Who is affected, and how?</div>	<div>4</div> <div>What is the impact and the local and global level?</div> <div>Social</div> <div>.....</div> <div>Technological</div> <div>.....</div> <div>Environmental</div> <div>.....</div> <div>Economic</div> <div>.....</div> <div>Political</div> <div>.....</div> <div>Values</div>	<div>6</div> <div>Highlight the most important and surprising findings</div>

Case Study:



Canvas #2: Backcasting

To arrive at the future scenario that you’ve just explored, what needed to happen?



Case Study:



Canvas #3: Taking Action Today

What tools would you use?	What resources would you need?
What networks and communities would need to be created and/or engaged?	How would you put this into action?
Bonus Question: How would you evaluate and monitor these interventions?	



Styles of government intervention*

	Early stage intervention	Framing, piloting and market forming	Scaling, mainstreaming and market building	Acting in mature markets and policy ecosystems
Government as a... Steward	Champion Build a case for change and alliances for action.	Convening power Applying government's convening power to draw together expertise.	Connecting networks Fostering a nexus where government, experts and citizens can co-create change.	Co-producing Co-deliver by steering different actors from across the system to deliver outcomes.
Leader	Agenda setting Build awareness and confidence in new opportunities by providing thought leadership	Strategy and skills planning Prepare for changing workforce demands and consequences of change.	Educating and informing Ensure regulation is sufficiently agile and permissive to enable innovation.	Collaborating Providing platforms for citizens to protect vested rights and interests.
Customer	Catalyst Review, identify and prioritise key opportunities with strategic value.	Standard setting Develop standards for data collection and presentation.	Intelligent customer Utilise public procurement to encourage investment and innovation.	Consumer, and supply-chain, protection Protection of consumer rights and upholding of standards.
Provider	Innovator Create test beds, sandboxes and trials in real world settings.	Reformer Establish legitimacy, harnessing political will for change.	Service provider Provide services directly or indirectly through funding and target setting.	Choice architect 'Nudging' behaviour so that the default is both attractive and easy.
Funder	Early adopter Explore, experiment and trial new opportunities with strategic value.	Fiscal incentives Direct finance to stimulate new thinking that can drive future opportunities.	Grants and subsidies Incentivise behaviour change through grants or other incentives	Platform provision Scale up proven ideas through existing infrastructure and public services.
Regulator	Encourage voluntary codes Self-regulation, without legislating, allowing for greater flexibility.	Governance Ensure regulation supports the conditions for change and delivers the policy intent.	Building regulatory environment Ensure regulation enables the intended policy outcomes.	Compliance Support enforcement and harmonise regulatory compliance environment.
Legislator	Green papers Publish proposals for discussion with stakeholders and the public.	White papers & draft bills Publish proposals for consultation and pre-legislative scrutiny.	Primary and Secondary Law Support a bill through parliament and enact legislation	Amend rules Statutory Instruments: rules, orders, created by delegated authorities (e.g. Secretary of State).

* Examples of different formal and informal powers and levers for government policy-makers

Siodmok, Andrea. 2017. "Mapping Service Design And Policy Design". Openpolicy.Blog.Gov.Uk.
<https://openpolicy.blog.gov.uk/2017/09/22/designing-policy/>.