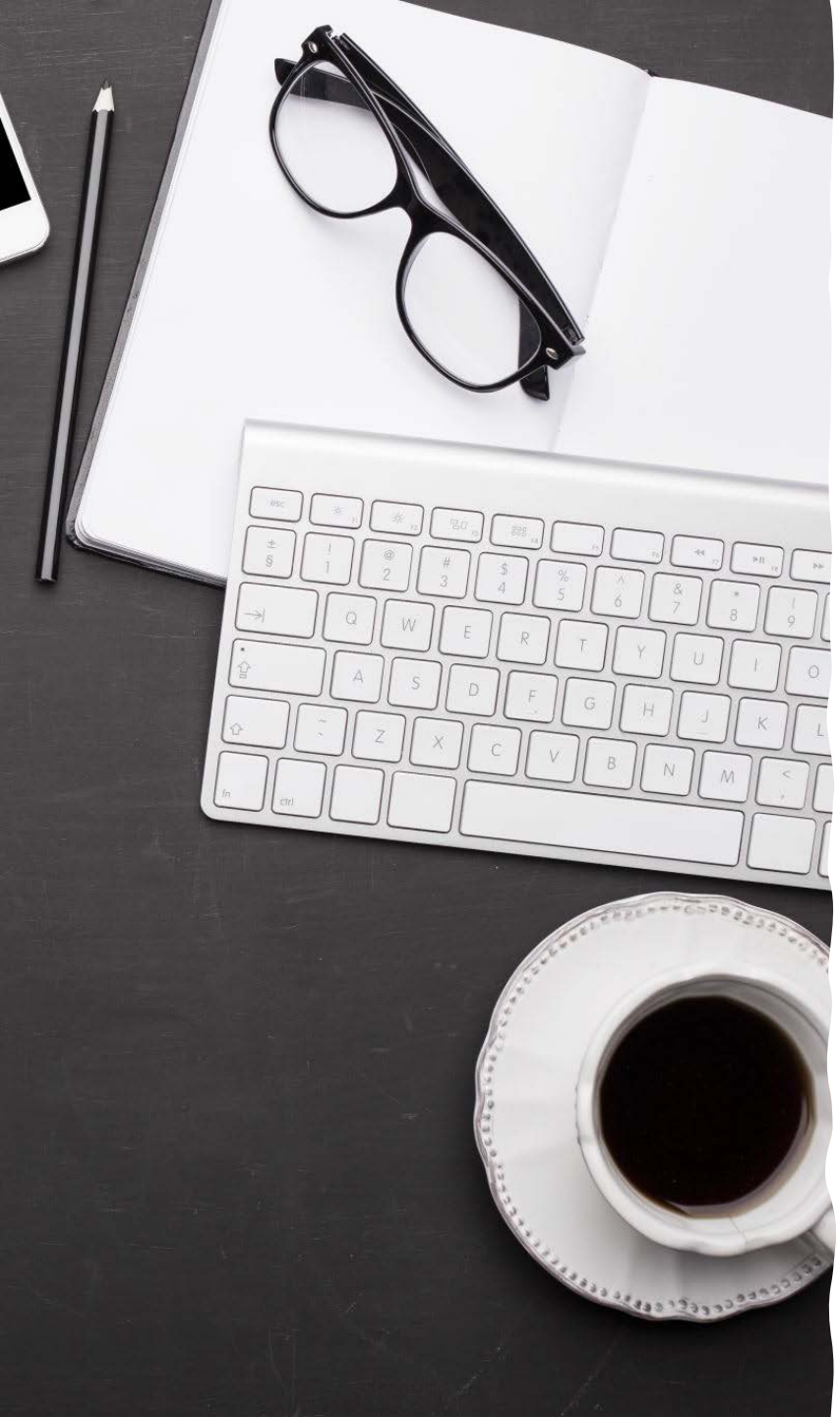

e-Infrastructures in support of addressing societal challenges: The Challenge of sustainability

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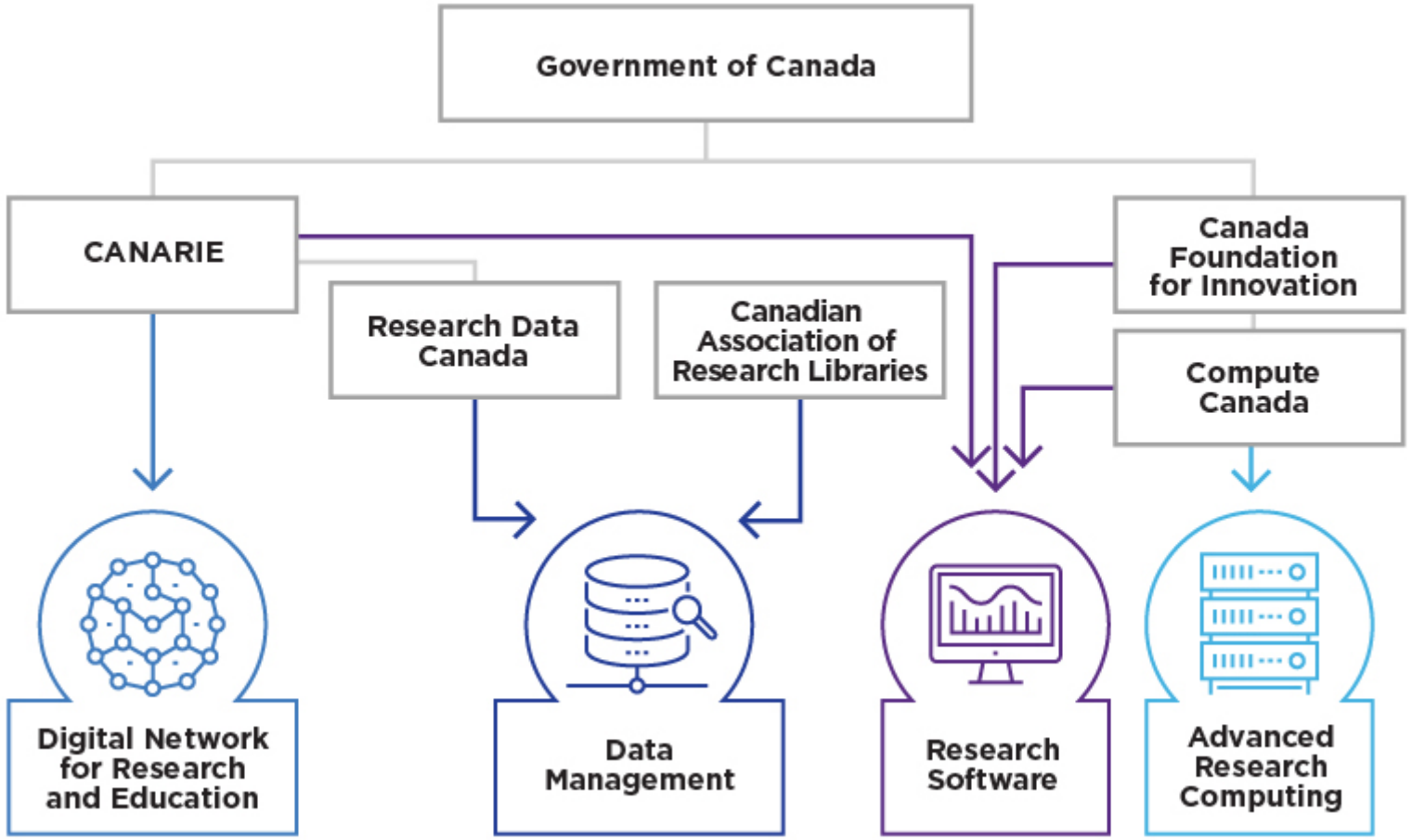
Outline of Presentation

Focus on how three key factors impact sustainability:

1. Designing and building appropriate national operational models
2. Adjusting to shifting regulations and government policy directions
3. Keeping up with technological depreciation and innovation

Canada's existing national digital research infrastructure



Timeline: How did we get here?

- 2002 – Canada Foundation for Innovation (CFI) workshop on the future of Advanced Computing Resources: led to the creation of Compute Canada, version 1 distributed network
- 2010 – Consolidation of Compute Canada, version 2, first attempt to build an integrated network
- 2015 – mandated consolidation and expansion of capacity

27 data centres,
200,000 cores,
2 Pflops, 20 PB
200 experts

5-10 data centres
300,000 cores,
12 Pflops, 50+ PB
200 experts

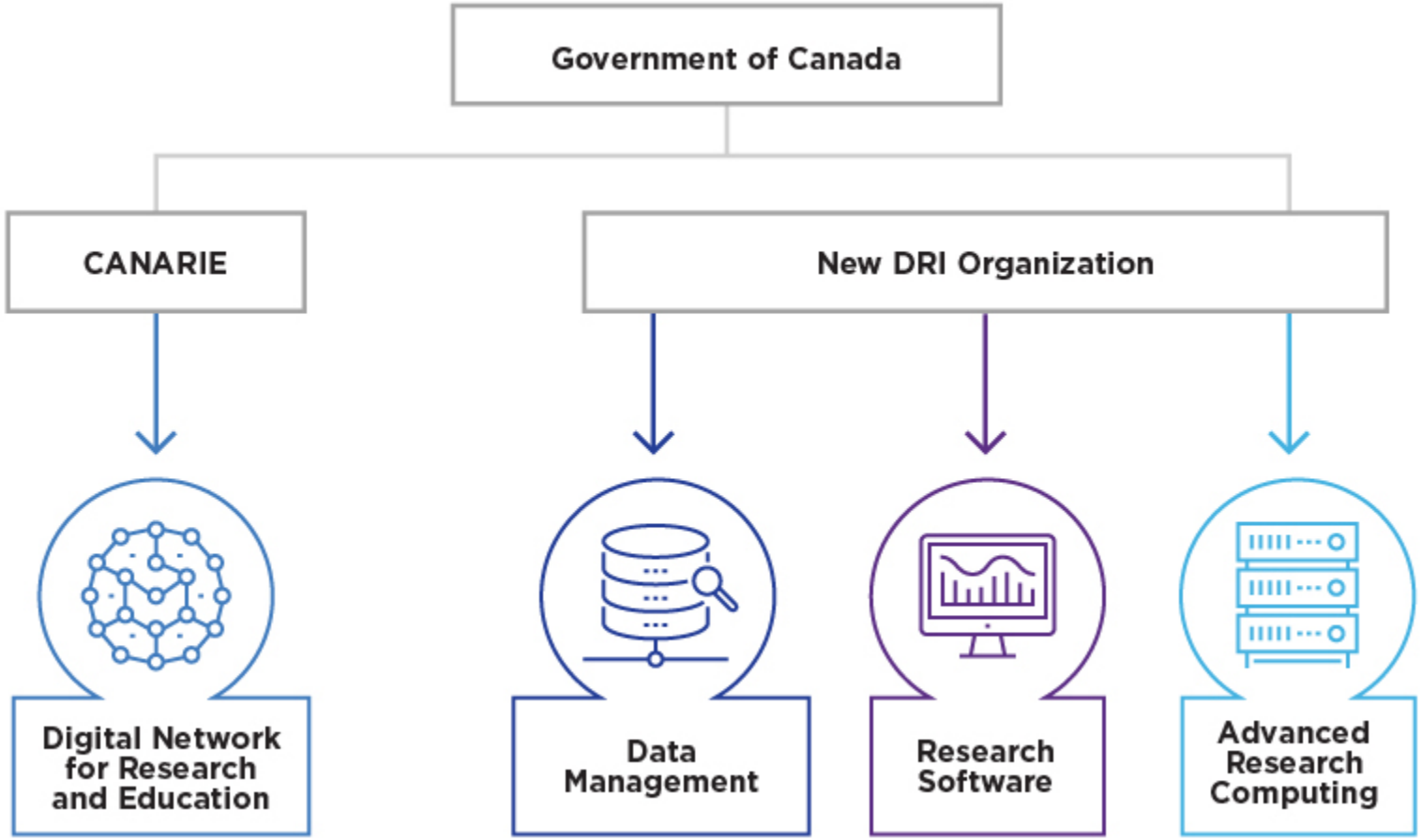
New Digital Research Infrastructure Strategy (DRI)

2018 – Compute Canada, version 3, national integrated platform

DRI responsibility removed from CFI and placed under main government science and industry department;

- $375 million towards a new national not-for-profit organization;
- $50 million in the immediate expansion of Advanced Research Computing capacity at up to five existing national ARC host sites;
- $145 million for CANARIE, the manager of the ultra-high-speed network;
- Increase federal funding for the national layer of the DRI system and work with provinces and institutions to clarify roles and funding going forward.

New Digital Research Infrastructure Organization (NDRIO)



Outcome of the Digital Research Infrastructure Strategy

A national competition concluded with four new national sites chosen to host the new systems:

University of Victoria
Simon Fraser University
University of Waterloo
University of Toronto

- 4 main national computing and data management sites; no regional distribution
- Centralized services with expert personnel in 27 universities; no individual nodes
- Increased involvement of private sector providers; meet pressures on government for procurement and commercialization

Today's challenges:

- Overcoming regional interests and securing provincial participation (up to 40% of funding)
- Dealing with contending regulations and policies:
  - open access vs. supporting industry
  - Data security vs. international collaboration
  - Meeting both national and international regulations
- Technological depreciation and funding new systems (when, where and with what funds?)

Questions and comments?