NDRIO | NOIRN

New Digital Research Infrastructure Organization

Nouvelle organisation d'infrastructure de recherche numérique

Canada's HQP Session
August 18, 2021

AGENDA

1. Welcome
2. Needs Assessment Findings
3. Strategic Plan & NSDM Update
4. Q&A

NEEDS ASSESSMENT

WHY CONDUCT A NEEDS ASSESSMENT?

The Canadian DRI Needs Assessment allows us to understand the current needs and gaps in the national DRI landscape, including:

- Spectrum
- Temporal duration
- Magnitude
- Existing capacities and resources

The Needs Assessment will also serve as a baseline against which to measure our future progress and inform future consultations.

HOW HAVE WE CONDUCT THE NEEDS ASSESSMENT?

- ***105*** *unique Position papers*
  - ***305*** *authors*
  - ***112*** *organizations*
- ***19*** *Strategic plans*
- ***1384*** *survey respondents*

- ***8*** *Virtual Town Halls (4 ENG / 4 FR)*
  - ***Awareness & Accessibility***
  - ***Operations***
  - ***Policy & Governance***
  - ***Support***
- ***477*** *attendees*

KEY TAKEAWAYS / RECOMMENDATIONS

- Adopt and promote the use of free and open-source hardware and software.
- Be transparent.
- Coordinate DRI funding opportunities with the Tri-Council.
- Establish a funding program dedicated to cover salaries for HQP and Professional Staff.
- Expand on discipline-specific technical support.
- Expand the provision of training on DRI tools and resources, from basic to advanced.
- Improve outreach and engagement of under-represented/under-utilizing communities and bring them to par with traditional DRI users.

KEY TAKEAWAYS / RECOMMENDATIONS

- Improve remote access to DRI.
- Improve support for small ARC users.
- Increase support in the Social Sciences Humanities and Health Research.
- Improve the usability of DRI (e.g., ease of use).
- Make DRI free and accessible to every researcher in Canada, regardless of institution, geographic region, or research discipline.
- Provide professional services for the development of code, algorithms, and pipelines.
- Remove administrative barriers to access and use of DRI.

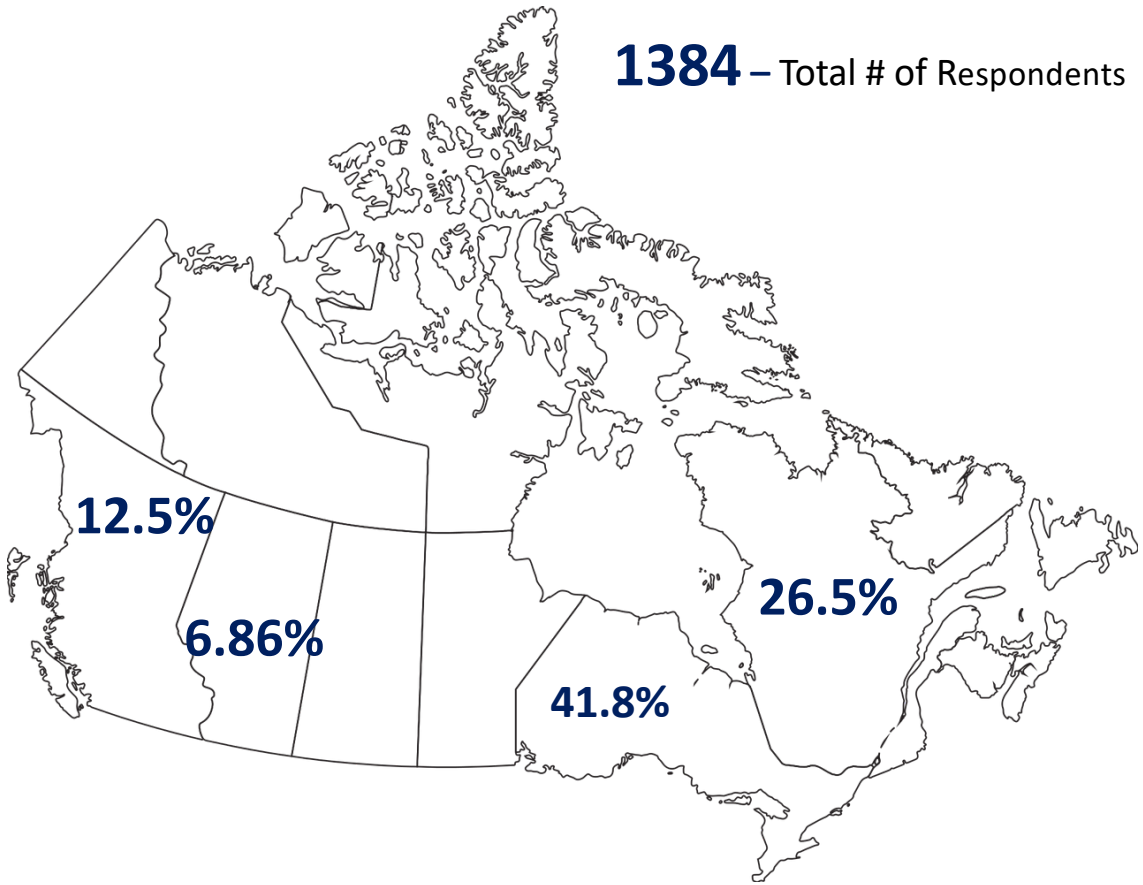
NATIONAL DRI SURVEY

THE PURPOSE OF THE SURVEY

The survey was designed to understand how researchers from different academic disciplines, geographic regions, and institutions make use of DRI. It has two sections, general aspects of DRI usage and technical aspects of RDM, RS, and ARC, and follows the research lifecycle.

Questions were included on data collection, storage, computing and analysis, and knowledge mobilization.

SURVEY RESPONDENTS' DEMOGRAPHICS



1384 – Total # of Respondents

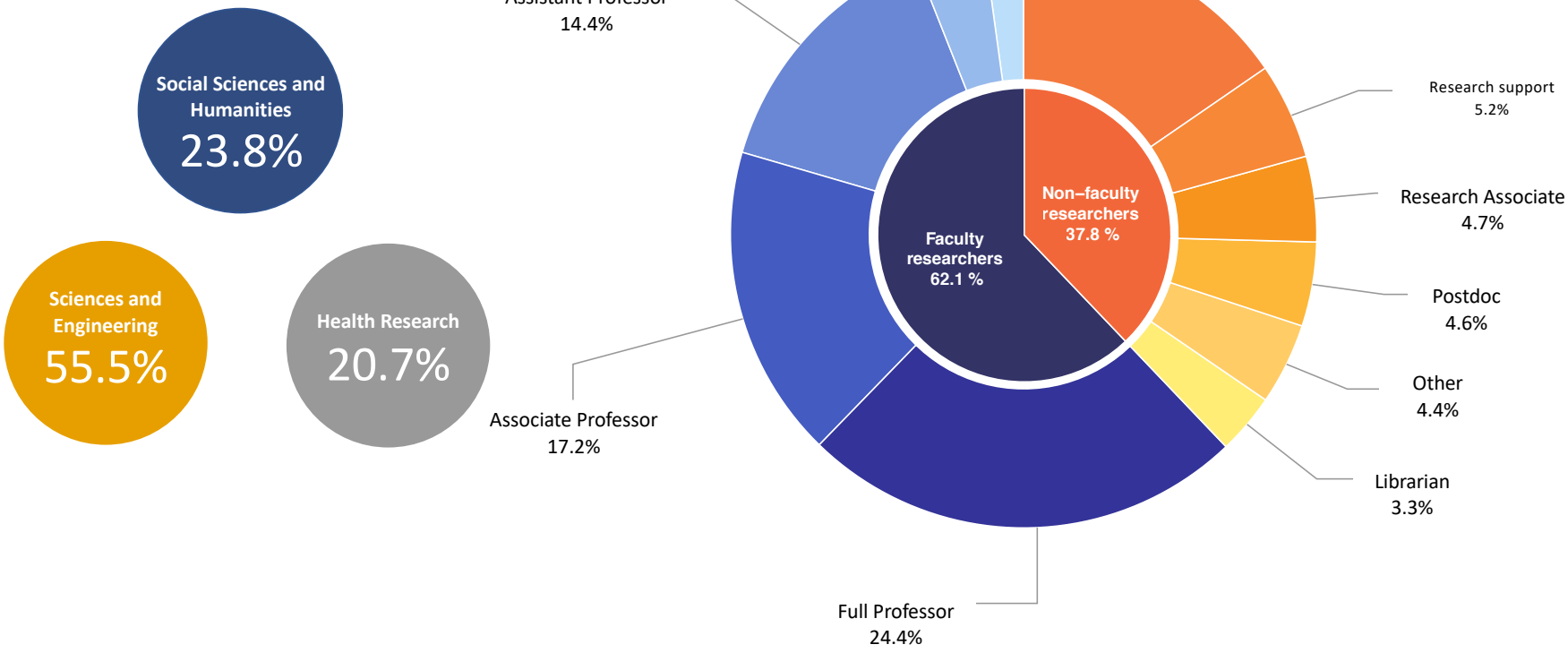
57.8% - identified as men

34.3% -identified as women

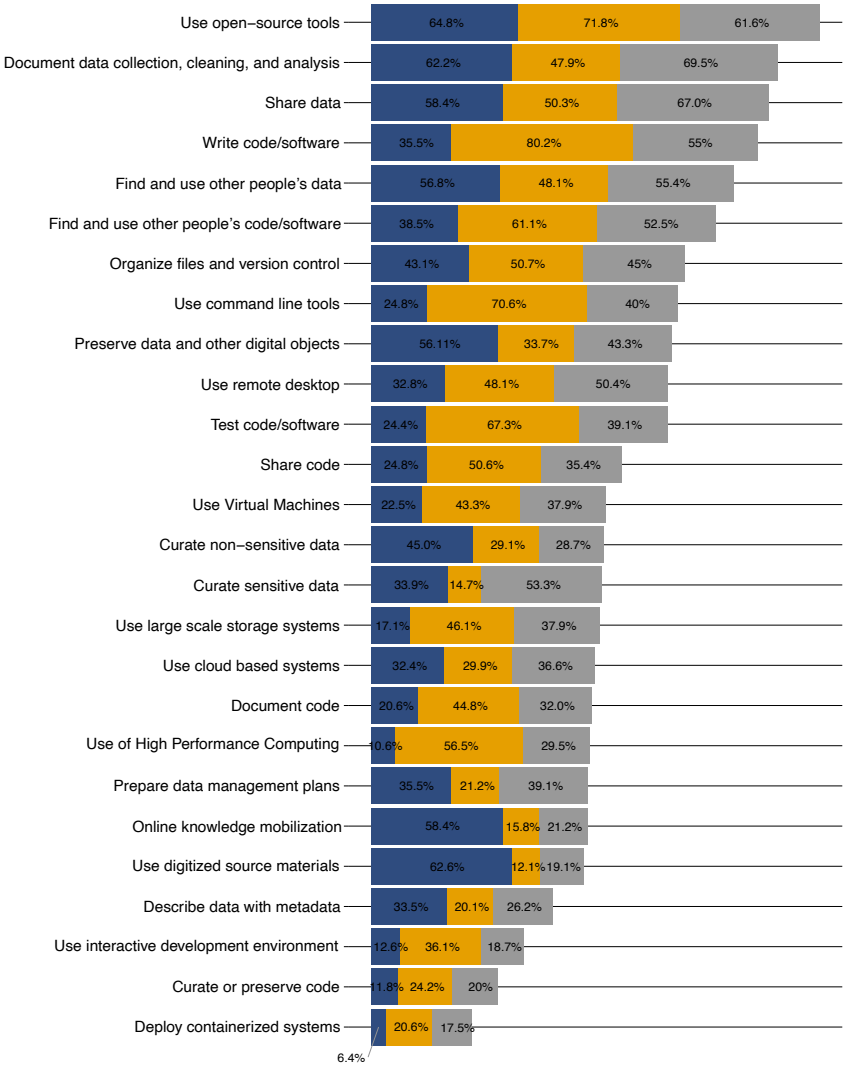
~2% - gender diverse

~6% - preferred not to share

RESPONDENTS' DEMOGRAPHICS



Q - Which of these activities are part of your research workflows?



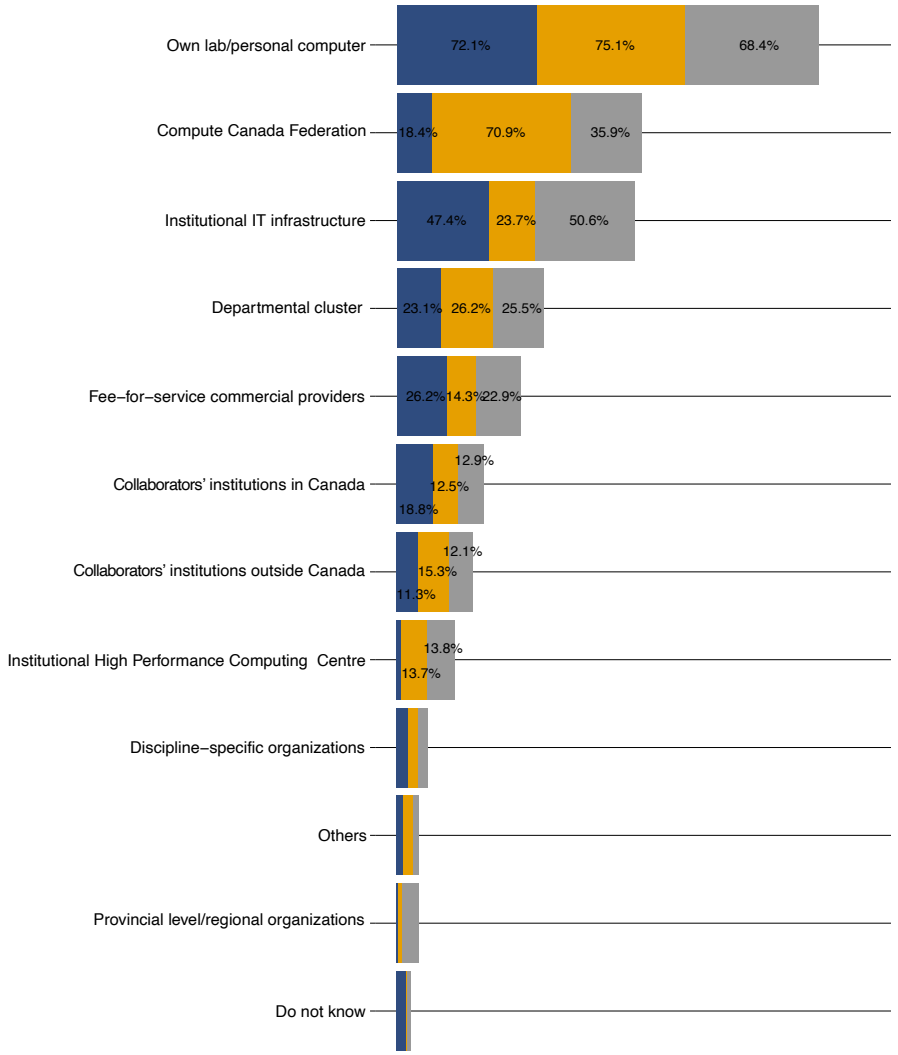
Social Sciences and Humanities

Sciences and Engineering

Health Research

(Social Sciences and Humanities, n= 262; Health Research, n= 240; Science and Engineering, n= 644; Total = 1146)

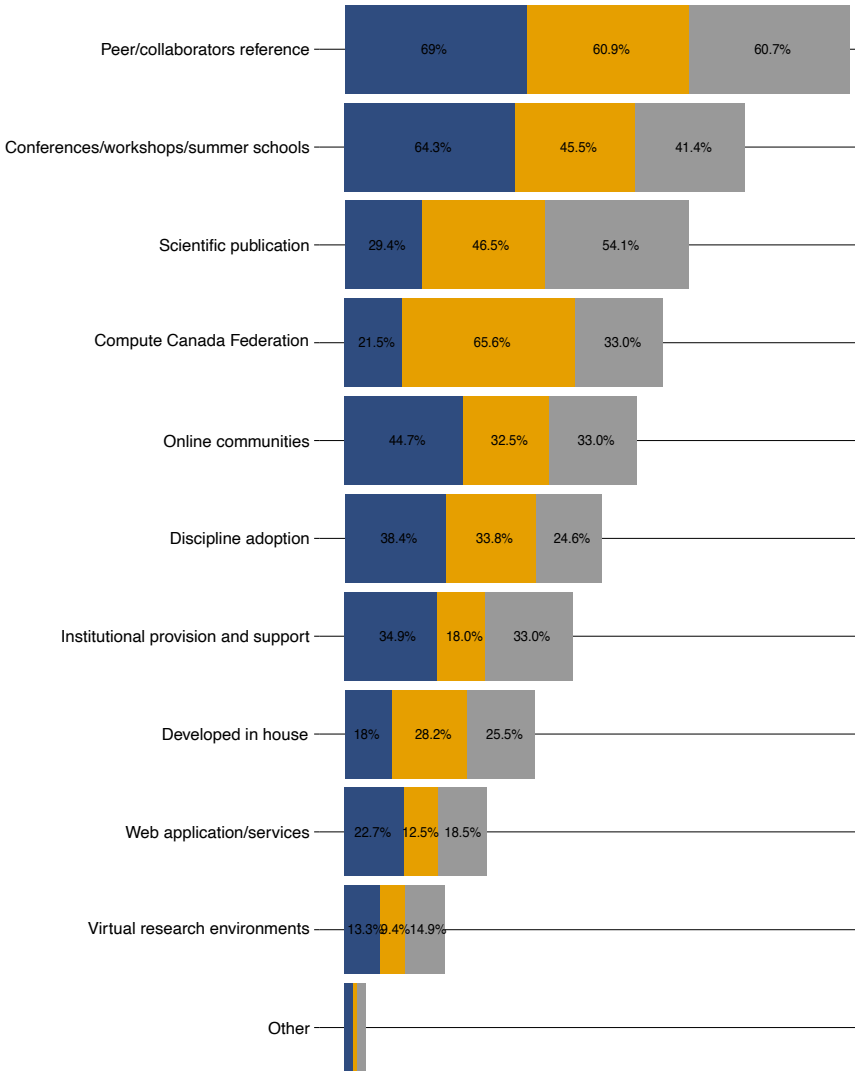
Q - Where is the computing infrastructure you use in your research?



- Social Sciences and Humanities
- Sciences and Engineering
- Health Research

(Social Sciences and Humanities, n= 255; Health Research, n= 231; Science and Engineering, n= 620; Total = 1106)

Q - Through which channels have you discovered the digital tools and services adopted or implemented in your research?



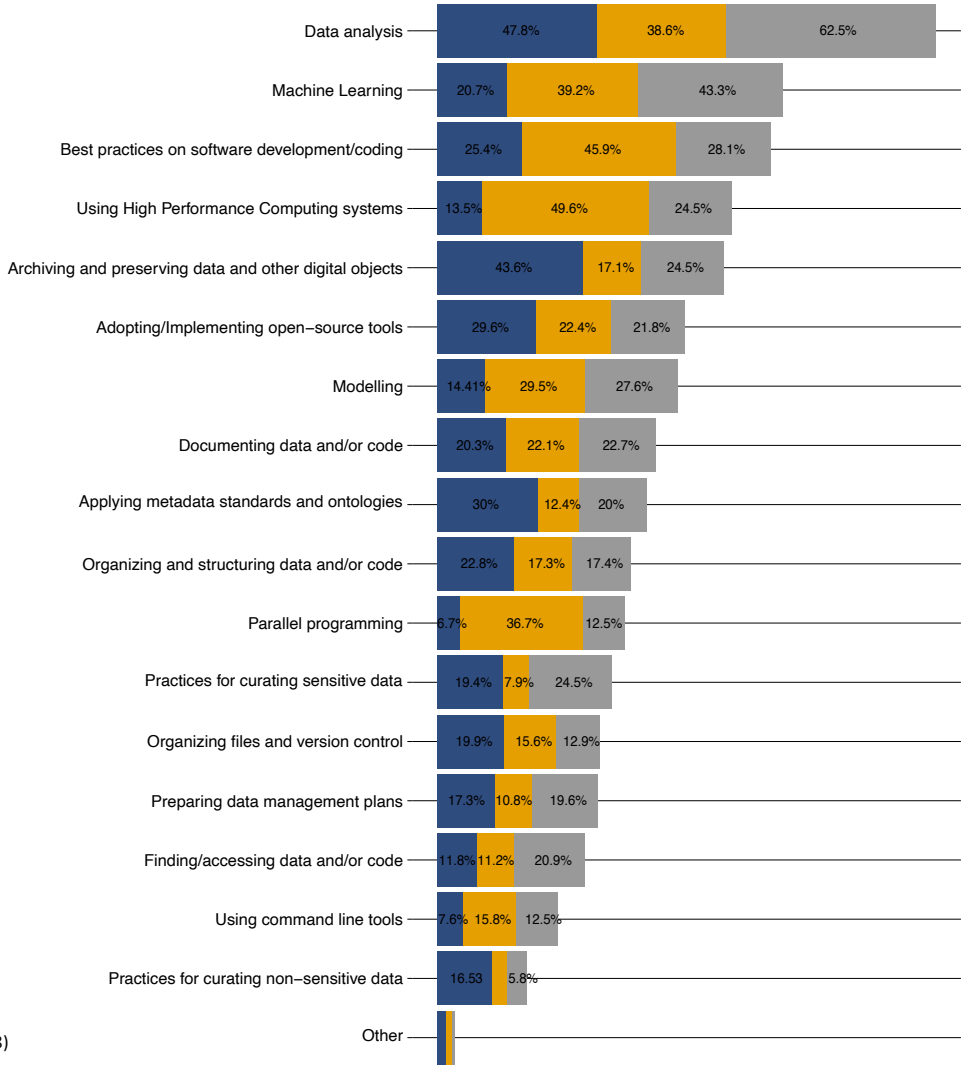
Social Sciences and Humanities

Sciences and Engineering

Health Research

(Social Sciences and Humanities, n= 255; Health Research, n= 227; Science and Engineering, n= 615; Total = 1097)

Q - Choose the top 5 areas where you, or members of your team, most require training to improve and maximize your use of DRI.



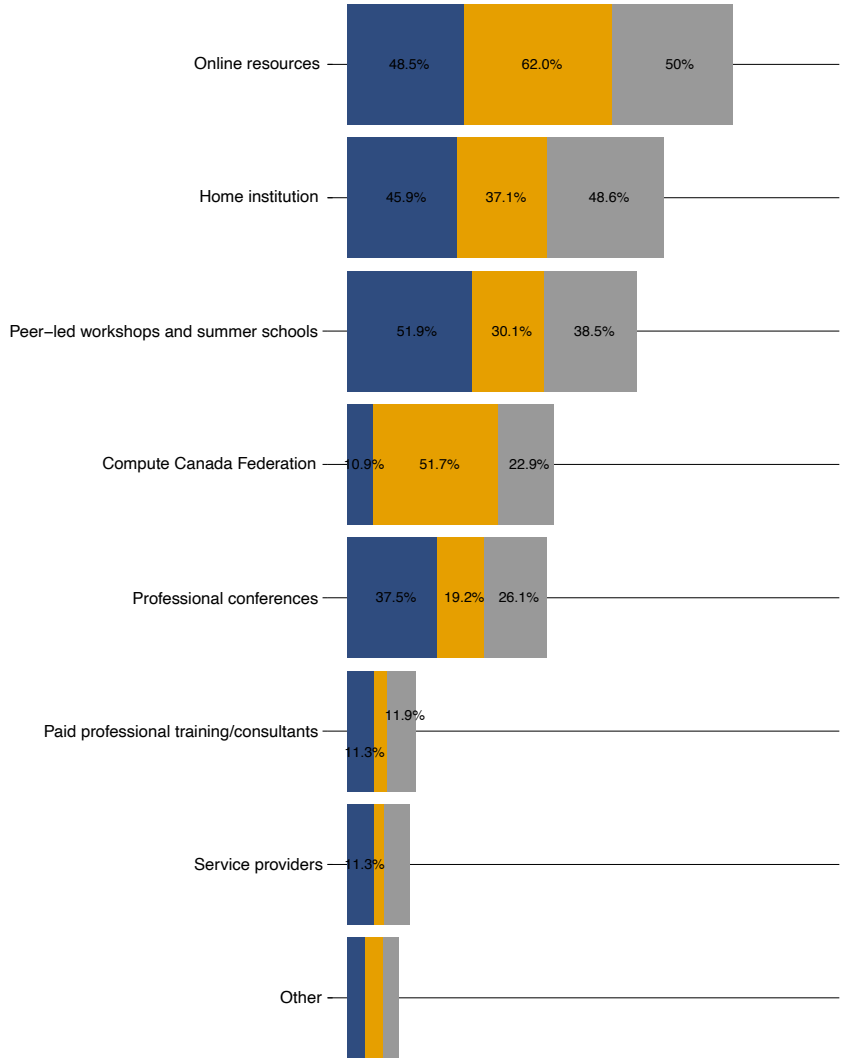
Social Sciences and Humanities

Sciences and Engineering

Health Research

(Social Sciences and Humanities, n= 236; Health Research, n= 224; Science and Engineering, n= 588; Total= 1048)

Q - Choose the 3 sources you, or members of your team, most often receive training from?



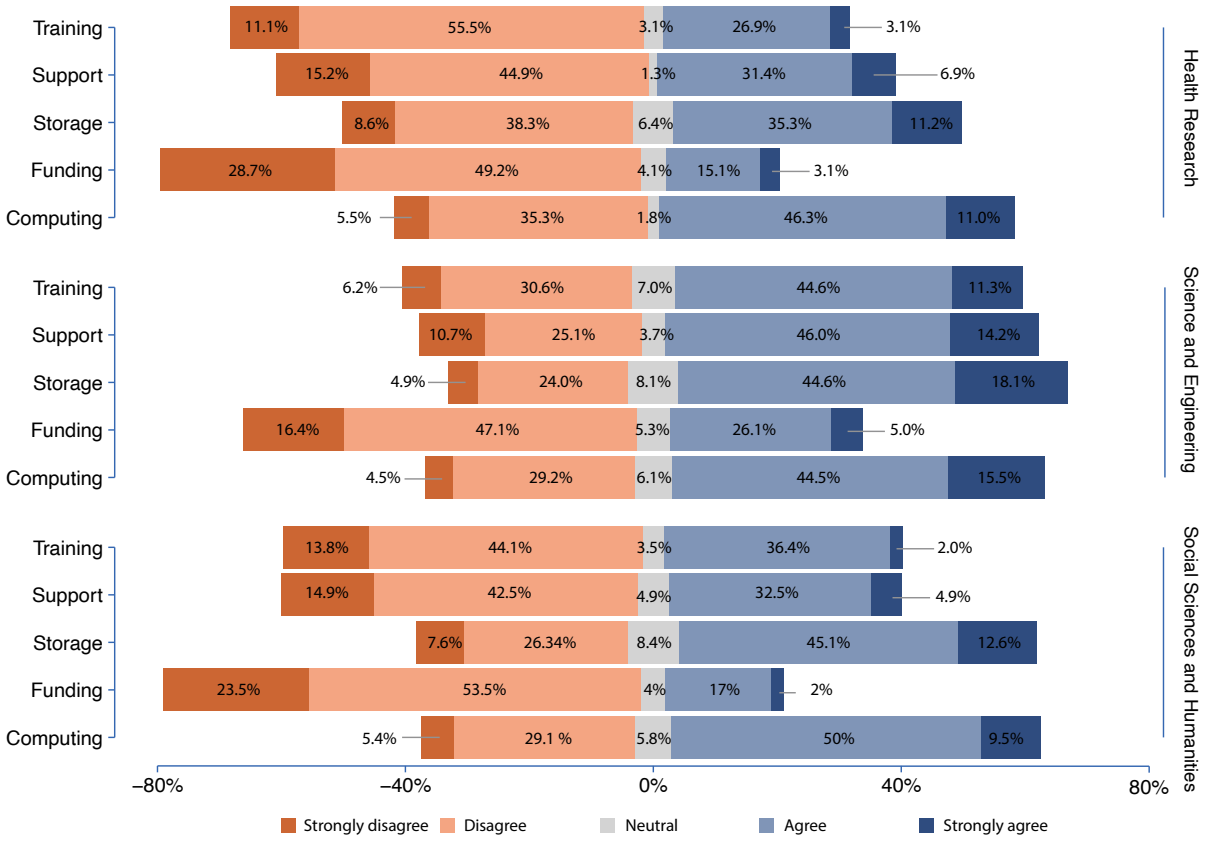
Social Sciences and Humanities

Sciences and Engineering

Health Research

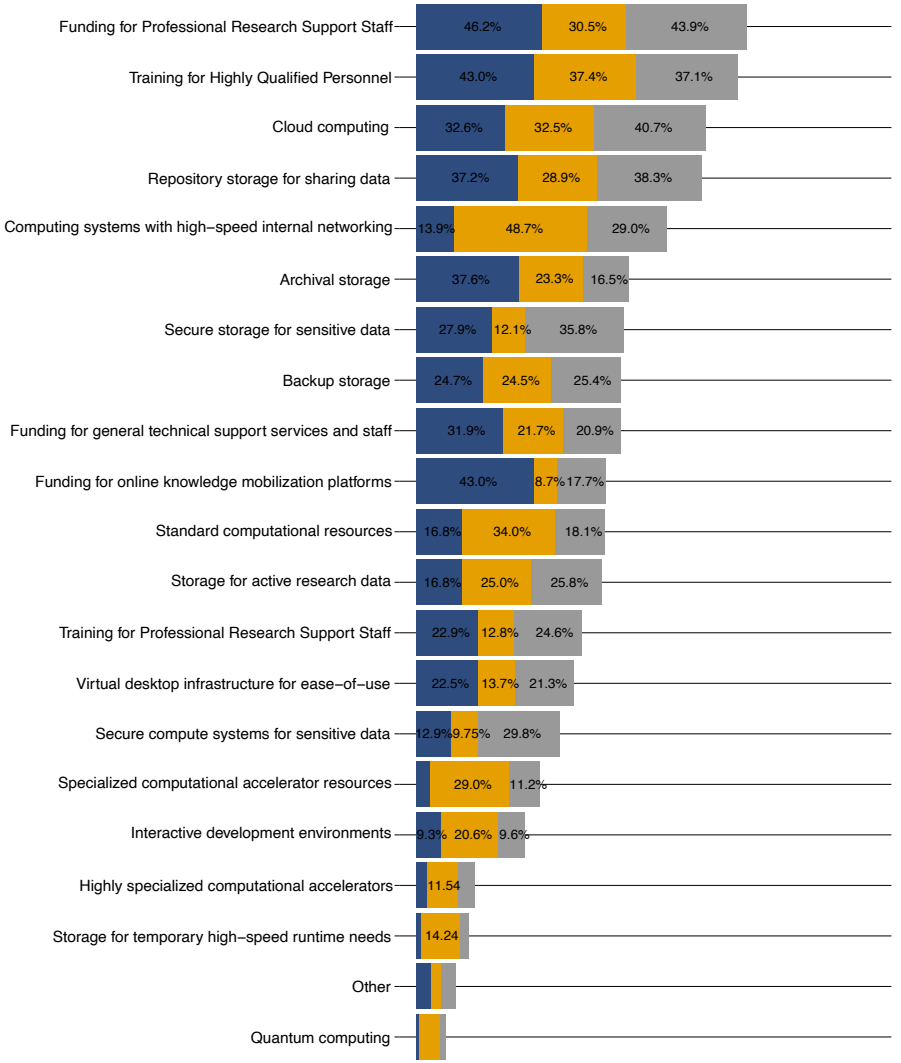
(Social Sciences and Humanities, n= 237; Health Research, n= 218; Science and Engineering, n= 587; Total= 1042)

Q - How well are your current Digital Research Infrastructure needs being met?



(Social Sciences and Humanities, n= 224; Health Research, n= 210; Science and Engineering, n= 535; Total= 969)

Q - What should NDRIO prioritize to meet your current and future DRI needs? Choose the top 5.



Social Sciences and Humanities

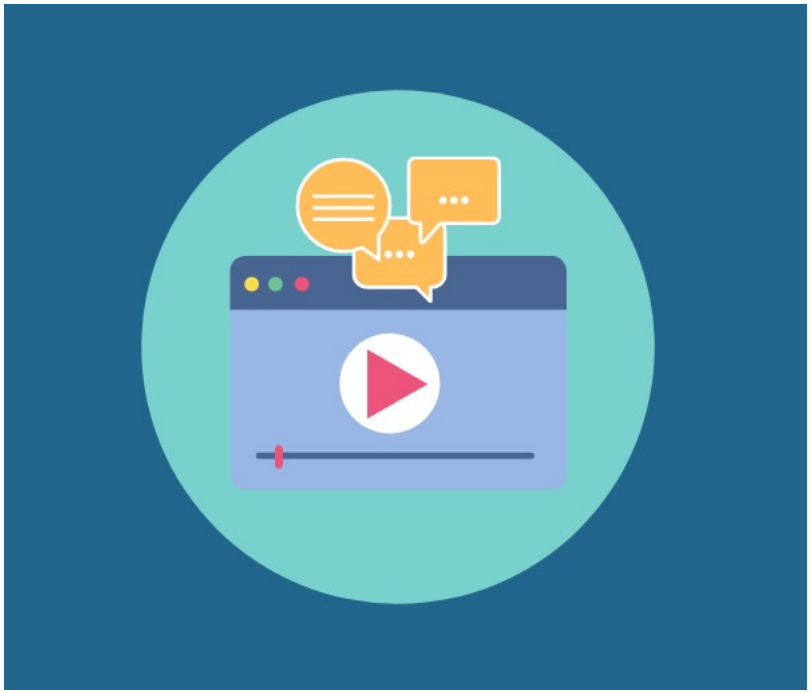
Sciences and Engineering

Health Research

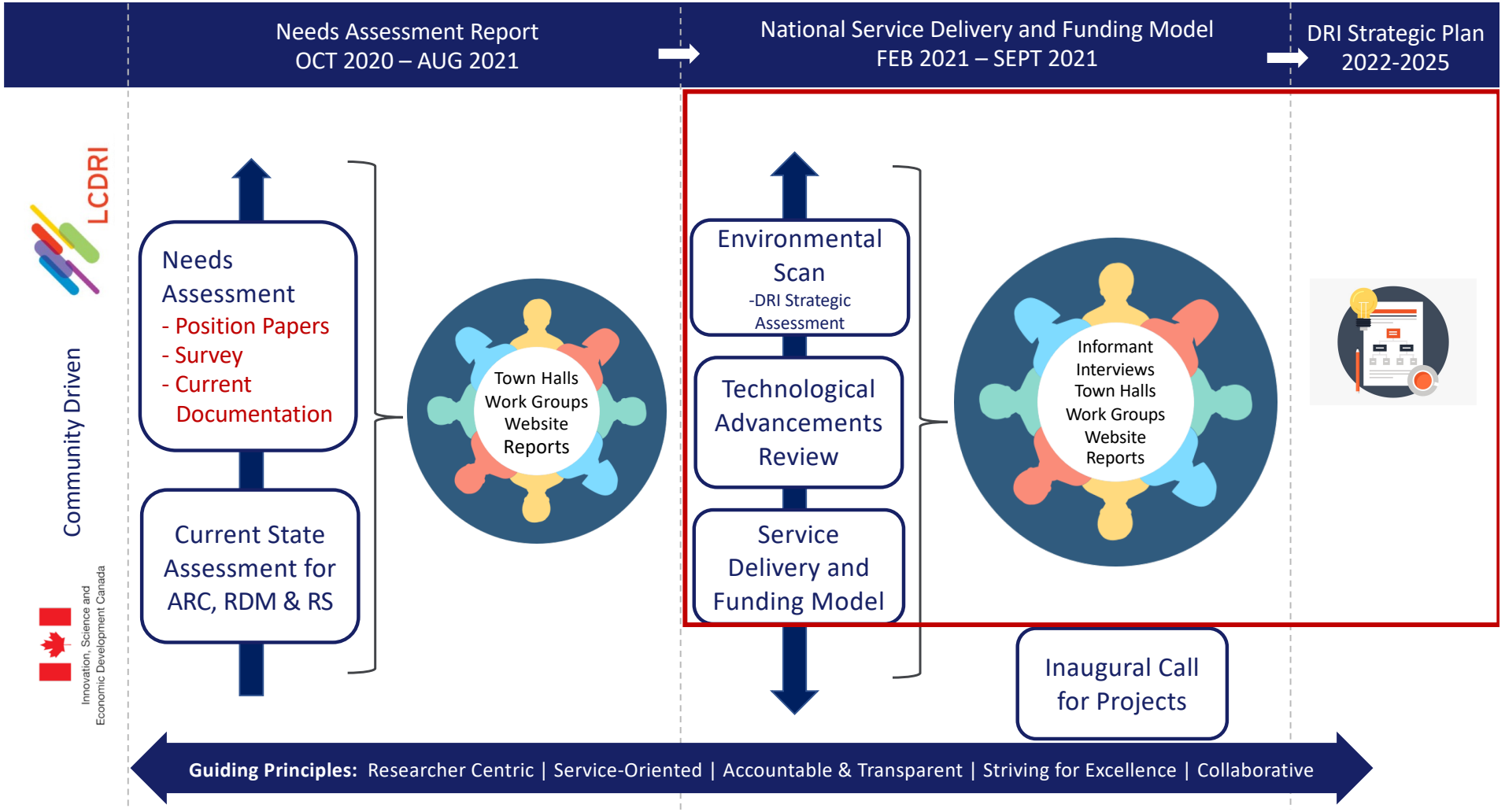
(Social Sciences and Humanities, n= 279; Health Research, n=248; Science and Engineering, n= 667; Total= 1194)

NEEDS ASSESSMENT - NEXT STEPS

- Incorporating findings into NDRIO's Strategic Planning process
- ~90-page report to be shared for feedback (Researcher Council & Working Groups)
- After feedback has been incorporated, the report will be translated into both official languages and published for public access.



NATIONAL SERVICE DELIVERY & FUNDING MODEL AND STRATEGIC PLAN UPDATE

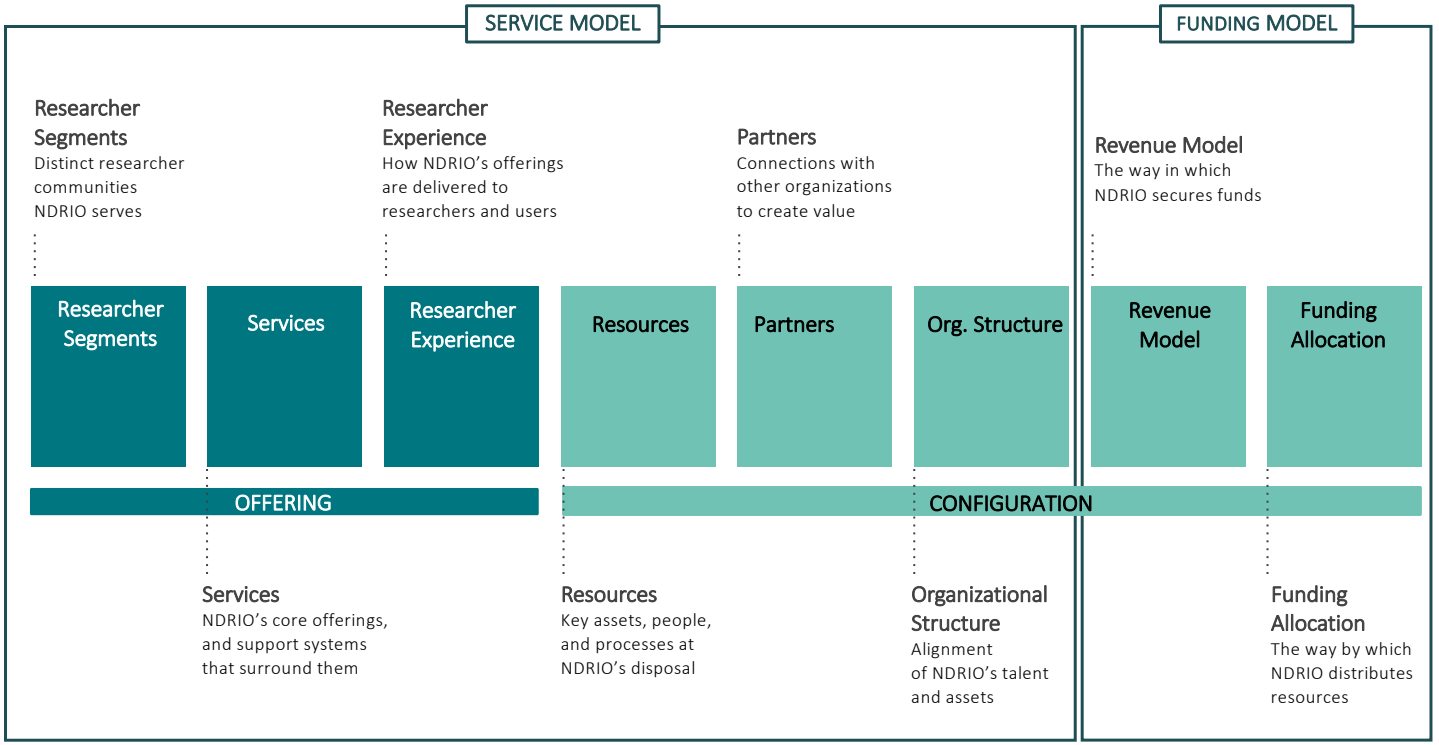

Needs Assessment Report
OCT 2020 – AUG 2021
National Service Delivery and Funding Model
FEB 2021 – SEPT 2021
DRI Strategic Plan
2022-2025
LCDRI
Community Driven
Innovation, Science and Economic Development Canada
Needs Assessment
- Position Papers
- Survey
- Current Documentation
Current State Assessment for ARC, RDM & RS
Town Halls
Work Groups
Website
Reports
Environmental Scan
-DRI Strategic Assessment
Technological Advancements Review
Service Delivery and Funding Model
Informant Interviews
Town Halls
Work Groups
Website
Reports
Inaugural Call for Projects
Guiding Principles: Researcher Centric | Service-Oriented | Accountable & Transparent | Striving for Excellence | Collaborative

PROJECT TIMELINE

Goal	***Develop a baseline understanding of DRI current state*** *and desired future state, notably via stakeholder consultations*	***Define NDRIO's strategic vision*** *and develop a set of options for service delivery (SDM) and funding model (FM) design with a recommended approach*	***Map the work needed to setup NDRIO's Operating Model and identify future state opportunities*** *by developing and prioritizing a series of objectives and corresponding initiatives*

NATIONAL SERVICE DELIVERY & FUNDING MODEL

NATIONAL SERVICE DELIVERY & FUNDING MODEL COMPONENTS

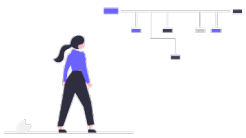


STRATEGIC PLAN

NDRIO'S STRATEGIC OPERATING FRAMEWORK

What are our aspirations?

- **NDRIO's Mission**
- **NDRIO's Vision**



Where will we play?

- **Researcher Segments:** NDRIO will offer a baseline of **consistent, high quality service delivery that is standardized to meet researchers' DRI needs….**
- **Services:** NDRIO will provide a **focused suite of services** with **broad applicability at a pan-Canadian scale**, while **working closely with partners** to ensure that the **breadth of DRI needs are addressed……**

How will we win?

- **Researcher Experience:** NDRIO will enable a **researcher-centric DRI experience** with the goal of researchers knowing **what is available and how to access services……..**
- **Partners:** NDRIO will adopt a **pro-active approach** of brokering both **public and private** sector partnerships….
- **Revenue Model:** NDRIO will implement a **mixed-source funding model that will include public funding streams and additional complementary funding…..**

How will we configure?

- **Organizational Structure:** NDRIO will ensure the **effective delivery** by **delivering select capabilities and engaging in the coordination of other capabilities…..**
- **Resources:** NDRIO will **develop select capabilities internally while leveraging partners to source some ancillary capabilities** externally……
- **Funding Allocation**: NDRIO will steward the Federal contribution prioritizing **full funding of pan-Canadian services** and **cost-sharing with provinces and territories for regional services…..**

What are the priority programs?

To be completed in Phase 3

NDRIO'S VISION & MISSION STATEMENTS

PRELIMINARY VISION STATEMENT

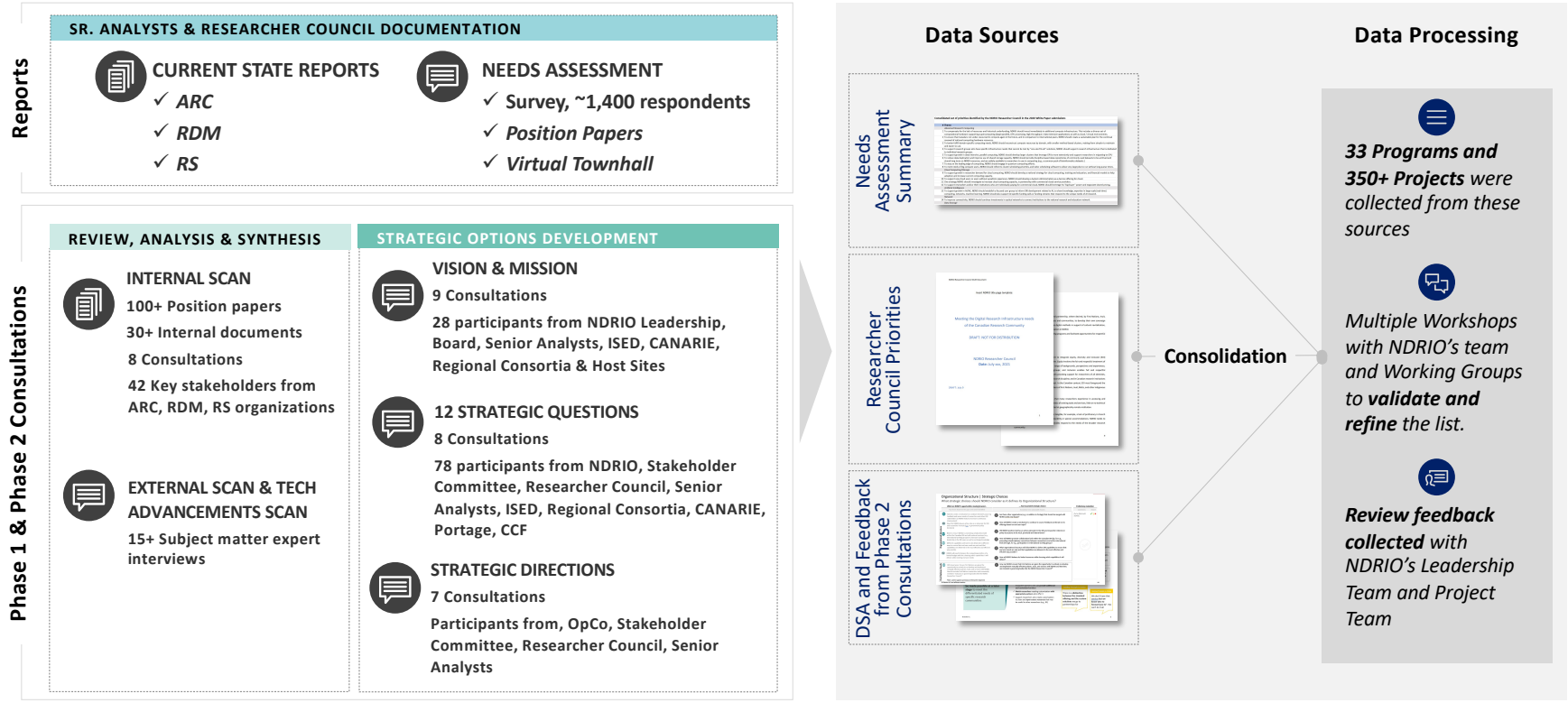
*To **catalyze** world-class **Canadian** research for the **greater good***

PRELIMINARY MISSION STATEMENT

*As a **trusted and inclusive partner**, NDRIO fosters **national and global collaboration** to provide researcher-centric, sustainable and integrated **digital research infrastructure***

ACTIONING THE FINDINGS

DEVELOPING THE STRATEGIC AREAS OF FOCUS



STRATEGIC AREAS OF FOCUS – NEXT STEPS

This list will be one of the inputs to create a roadmap of work over the next 3-5 years that will set direction on work needed to advance DRI in Canada and align with the DRI Strategy (ISED).

- NDRIO's current Working Groups (ARC, RDM, RS and Storage)
- Research Data Management and Research Software Teams
- ARC Federation National Team Leads, Host Site CTO's etc
- NDRIO's Board of Directors

Note: This will be an iterative process (e.g. living document) as new needs and opportunities arise.

ENGAGEMENT OPPORTUNITIES

UPCOMING ENGAGEMENT OPPORTUNITIES

Operational Planning

- October 2021 – February 2022
- To start the development of our joint annual plan that will take effect on April 1st 2022 we will work collaboratively to capture both the operational initiatives that are needed to across the National Systems and strategic investments.(Resource capacity determined)

Strategic Projects Scoping Exercise

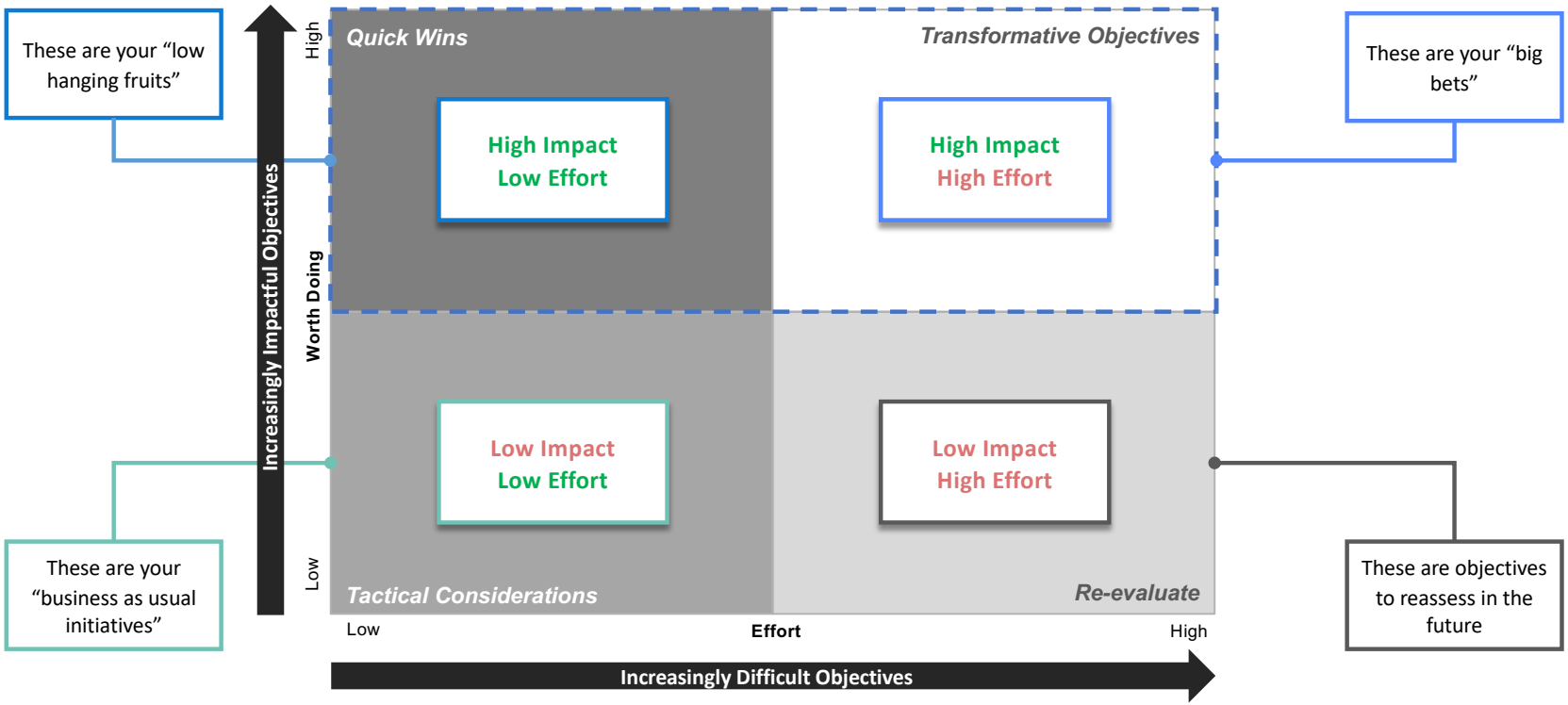
- November 2021 – March 2022
- Invitations to participate in focused working groups to scope and plan the projects within the prioritized programs within NDRIO's strategic plan.

QUESTIONS FOR YOU

1. What committees or groups could we connect with to learn more about the current operational strategy?
2. What committees or groups could we connect with to discuss strategy and planning of the federation strategy and services?
3. What are the different ways that we can / should consult with the federation staff with regards to planning?

Appendix Slides

PRIORITIZATION MODEL USED FOR AREAS OF FOCUS



PRIORITIZATION CRITERIA

Impact (Worth Doing?)

Effect on strategic outcomes, including alignment with Guiding Principles, risk mitigation and resulting benefits.

	Alignment with Guiding Principles	***Risk***	***Benefits***
	Is the objective aligned with the Guiding Principle(s)?	*What is the risk of **not** undertaking this objective?*	*To what degree will the objective drive positive outcomes for the DRI ecosystem? (e.g., innovation, service delivery)*
High	• Several to all elements align with Guiding Principles	• Critical impact to service provision if the objective is not carried out	• Significant beneficial impact to the DRI ecosystem
Med	• Partially aligned with Guiding Principles	• Non-negligeable impact to service provision if the objective is not carried out	• Some level of beneficial impact
Low	• No to few elements align with Guiding Principles	• Minimal impact to staff, researchers or service provision if the objective is not carried out	• No significant beneficial impact

Effort (Doable?)

Tactical considerations for carrying out an objective, including effort required (staffing, organizational change) costs and time horizon

	Effort	***Costs***	***Time Horizon***
	How significant are the capability requirements around people, process and technology? (e.g., FTE hours and/or overall involvement of DRI operations)	*What are the estimated investments ($), including upfront and recurring costs? (Costs can be **internal** [cost of FTEs and/or staff augmentation, equipment procurement, etc.], or **external** [vendor services])*	*What is the amount of time required (both elapsed time and 'people' time) to actively deploy this objective?*
High	• Significant changes required to people, process and technology	• $ 500K+ - High associated costs	• 12+ months - Long-term
Med	• Some changes required to people, process and / or technology	• $ 10K-500K - Medium associated costs	• 6-12 months - Medium-term
Low	• Limited / no changes required to people, process or technology	• $ 0-100K - Low costs	• 1-6 months - Short-term

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HOW THE STRATEGIC FRAMEWORK SHAPES THE NSDM?

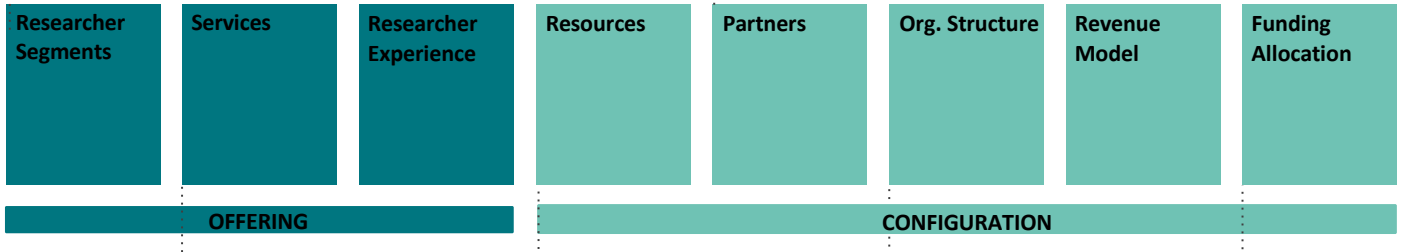
SAMPLE OF QUESTIONS

Level of customization ["Where to Play"]*
Will NDRIO customize its service delivery to meet the specific needs of different researcher segments, (i.e., tiered value proposition by discipline and demographic, by resource type) or adopt a more standardized approach?

Delivery approach ["How to win"]
Will NDRIO maintain distinct service delivery channels to deliver its services (e.g., differs from ARC, DM, RS), or focus on delivering an integrated channel experience (e.g., through central platform) for DRI needs?

Partner leverage ["How to win"]
Will NDRIO augment its services by leveraging predominantly public partners or by forming new alliances in the private sphere, while still maintaining academic freedom, and how will it choose which type of partners to leverage?

Revenue sources ["How to configure?]
Will NDRIO introduce new ways of generating revenues (e.g., private partnerships; pay-per-use) or continue to rely only on government funds?



Breadth of services ["Where to Play"]
What is the breadth of the NDRIO service suite offered to Canadian researchers, i.e., will NDRIO offer access to a smaller service catalog, or a broader one?

Capability sourcing ["How to configure?"]
How will NDRIO source critical capabilities (i.e., data repositories, national sites) required to deliver its services, and will some functions be externally sourced, and how will NDRIO determine which capabilities are internally sourced?

Centralization ["How to win?"]
Should NDRIO's governance and role within the DRI ecosystem be more centralized (i.e., directly responsible for more aspects of the Canadian DRI), or more decentralized?

Access to funds ["How to configure?"]
Will NDRIO seek to offer proportional funding based on the number of researchers that share a certain characteristic or will it adjust funding based on needs to achieve equitable distribution across segments?

Legend:
- **Offering** — Services, tools and value proposition to external stakeholders provided by NDRIO
- **Configuration** — Processes and governance structures that provide the operational scaffolding for NDRIO