NDRI Investment Plan Consultation Survey Summary

Final Question
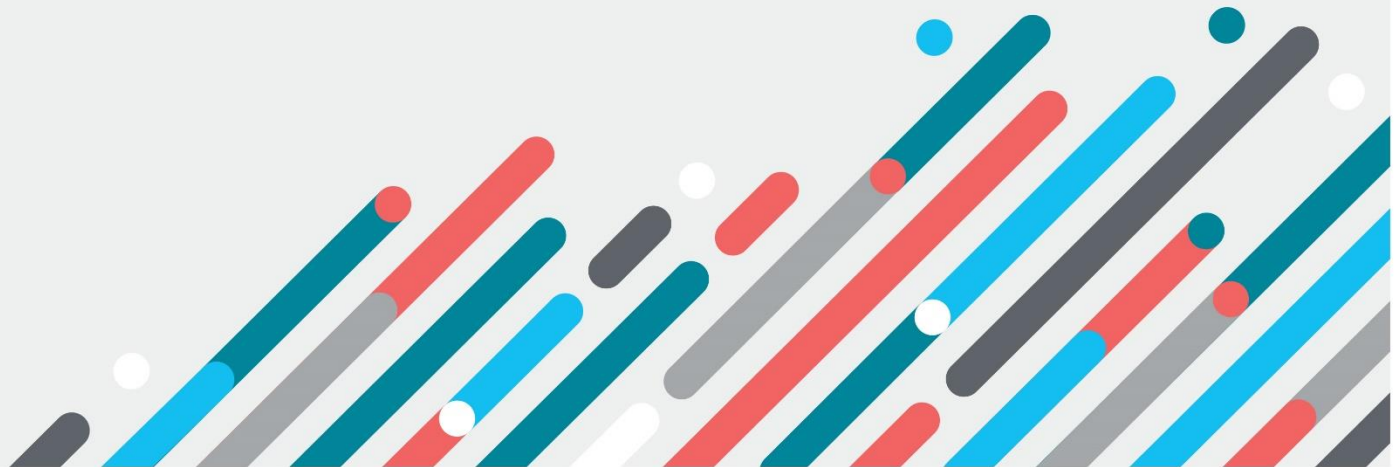
Q31 - Is there any other information you wish to share with us regarding the NDRI Investment Plan?	• Identify excellence where it is occurring and invest time and effort in exploring how those areas of excellence can be taken advantage of in other disciplines. So, the search for interdisciplinary solutions should be ongoing rather than done in one hit.
	• High performance compute (HPC) and high performance data will both benefit from investment in Tier-1 facilities to provide flexibility and ensure a greater range of resources are made available to researchers.
	• Focus on sustainable practices in NDRI investments, such as energy-efficient data centres and the use of renewable energy sources. This aligns with Australia's Net Zero greenhouse gas emission target by 2050.
	• It is worth emphasising the considerable disparity across institutions regarding digital capability and capacity. This should guide the investment plan, or it will remain a major impediment to progress.
	• NDRI need to recognise the importance of the Australian longitudinal cohorts as critical research infrastructure. These cohorts are research enabling platforms that support 1000's of local and international researchers.
	• The NDRI Investment Plan needs to cover health and medical research needs in the following key areas:
	   o data integration and interoperability
	   o ethics, legal, and social implications (ELSI)
	   o data complexity and management
	   o stakeholder engagement.
	• The NDRI Investment Plan needs to deliver support for domain-specific projects that address specific digital challenges in balance with global NDRI solutions that may enhance the entire ecosystem but may not lead to a tangible uplift for users.
	• Investments need to be user-centric, sustainable, and delivering against the NDRI Strategy Outcomes.
	• Fund one Tier 1 to refresh and expand infrastructure for non-sensitive data with a goal for exascale compute. Recognising that this is the peak compute, but it services a minority of our computational research.
	• Create incentives for partnerships in specialist areas not well served by Tier 1, such as AI, sensitive data workloads, and high-throughput data processing.
	   o This can leverage Tier-2 facilities that already have expertise, existing infrastructure, and appropriate cybersecurity certification.
	• Focus on lowering friction for moving compute workloads between facilities.
	   o Including national coordination of Identity that will be used by Tier-1.
	   o Adopt protocols for data storage that enables ease of data movement.
	• Establish a Digital Training Academy to create pathways for researchers of various backgrounds to upskill in the digital space.
	• Investment to make commercially important data to be available on the commercial cloud so that they can be used for commercial purposes.

	- By linking elements across the research and innovation ecosystem through persistent identifiers (PIDs): - We can better understand the relationship between the elements of the ecosystem, including investment, use, outputs, outcomes and impact. - They enable us to map our research capability against national priorities and invest appropriately to address gaps. - Support for initiatives that implement the CARE Principles for Indigenous Data Governance. - There is an urgent need for infrastructure and governance that streamlines the design, planning, and execution of rapid clinical data access through a centralised initiative in Australia to drive our success in healthcare AI innovation. - A national research software engineer fellowship program is crucial to attract and embed software engineers within research environments. - Implementing a federated identity system, drawing on models from Estonia and Norway, will streamline access across research sectors. - Paired with role-based access control systems and zero-trust architecture, we can protect sensitive data while upholding open science principles. - Aligning our data governance with international standards like general data protection regulation will enable secure cross-border collaboration. - Incorporating Indigenous Data Sovereignty principles and building secure, co-located data storage with HPC resources will ensure NDRI's inclusiveness, ethical rigour, and ability to support diverse research needs. - NDRI support for building robust and ISO-standards-compliant research software and secure sensitive data collections during the research phase would enable a clear path to medical device certification and commercialisation, rapidly amplifying the impact of medical research software development.