Australian Government

Department of Education

Compute and AI – Summary

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Summary

The consultation identified several key considerations and potential investment priorities for digital research infrastructure:

Tier 1 computing refresh: Upgrading HPC facilities to maintain cutting-edge capabilities and competitive purchasing power.

Unified data fabric: Establishing a nationwide integrated environment for data management and access.

Skills and training: Investing in workforce development, addressing the skills gap, and training the next generation of HPC professionals to accelerate and prepare the scientific workforce for advanced compute, migration to GPU, and the adoption of AI.

R&D for sovereign capability: Developing domestic expertise to strengthen Australia's position in international collaborations.

Global ranking in specific areas: Focusing on achieving true global ranking in select research domains.

Inter-institutional connections: Building stronger links between centres of excellence in various fields.

Software development: Allocating a significant portion of the budget to software, following successful models like the US Exascale project.

Federated data layer: Creating a system that allows integration with Tier 2 and commercial sector resources.

Human-centered design: Maintaining focus on user-centric approaches in technology development.

Data storage: Addressing urgent storage needs, particularly in climate research.

Vendor relationships: Fostering closer ties with technology vendors for better evaluation and implementation of new architectures.

Cybersecurity: Continued investment in securing HPC resources against potential threats.

Workforce sustainability: Addressing the aging workforce issue and attracting new talent to the field.

Infrastructure expertise: Developing programs to train specialists in HPC infrastructure.

Rapid training solutions: Implementing NCRIS-led training initiatives to address the gap left by slow university curriculum reforms.

Access to large language models (LLMs): Ensuring broader access to LLMs, recognizing their growing importance in the AI landscape.

In summary, these investments would aim to enhance Australia's computational capabilities, data infrastructure, and human resources in the supercomputing and AI sectors, addressing both immediate needs and long-term strategic goals.

If you'd like to provide any additional comments or feedback on the above summary, you're invited to provide these views via the online NDRI Investment Plan Consultation Survey, which can be found on the department's NDRI webpage.