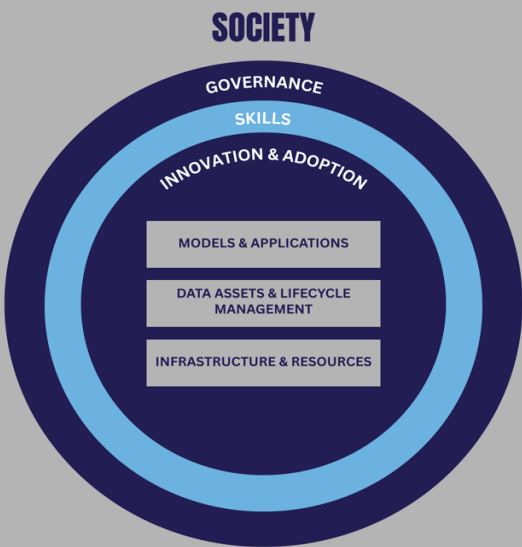


AI CAPABILITY TYPOLOGY & MATURITY STOCKTAKE



Maturity Levels

NONE	No identifiable capability
EMERGING	Early signs of progress towards some capability
ESTABLISHED	Capability exists (quality variable)
ADVANCED	High quality capability exists and is widely available/implemented

1. INFRASTRUCTURE & RESOURCES

Category I	Category II	Category III	Category IV	Australia's Maturity
1.1 Compute & Data Infrastructure	1.1.1 Data Centres			Established
	1.1.2 Training Compute	1.1.2.1 Private Sector Training Compute	1.1.2.1.1 Cloud Training Compute Infrastructure as a Service (public cloud)	Established
			1.1.2.1.2 Private Training Compute Clusters	Emerging
		1.1.2.2 Public Sector & Public Interest Training Compute	1.1.2.2.1 Public Sector & Public Interest AI Training Infrastructure	Emerging
			1.1.2.2.2 General-purpose Public Sector & Public Interest High-Performance Compute Infrastructure	Emerging
			1.1.2.2.3 International Agreements for Cross-border Access to Training Compute	Emerging
	1.1.3 Inferencing Compute	1.1.3.1 Private Sector Inferencing Compute	1.1.3.1.1 Cloud Inferencing Compute Infrastructure as a Service (public cloud)	Established
			1.1.3.1.2 Commercial Edge Inferencing Compute Deployments	Emerging
			1.1.3.1.3 Private Inferencing Compute Deployments	Emerging
		1.1.3.2 Public Sector & Public Interest Inferencing Compute	1.1.3.2.1 Public Sector & Public Interest High-performance Inferencing Compute Clusters	Emerging
			1.1.3.2.2 Public Sector & Public Interest Edge Inferencing Compute Deployments	Established
		1.1.3.3 Consumer or Personal AI Inferencing Devices		Advanced
	1.1.4 Data Storage Infrastructure			Established
1.2 Hardware Supply chain	1.2.1 Strategic & Critical Minerals	1.2.1.1 Natural Resources		Advanced
		1.2.1.2 Extraction		Established
		1.2.1.3 Refinement & Processing		Emerging
	1.2.2 Producing Accelerators	1.2.2.1 Designing Accelerators (Fabless)		Emerging
		1.2.2.2 Manufacturing Accelerators		None
		1.2.2.3 Packaging Accelerators		None
	1.2.3 International Agreements for Accelerator Supply			Not enough data
1.3 Supporting Infrastructure & Resources	1.2.4 Other Critical Data Centre Hardware & Construction Inputs			Established
	1.3.1 Electricity	1.3.1.1 Clean Electricity Generation		Established
		1.3.1.2 Electricity Transmission & Distribution		Established
	1.3.2 Network & Connectivity	1.3.2.1 Broadband Capacity		Established
		1.3.2.2 Subsea Cables		Established
	1.3.3 Water Supply			Emerging
	1.3.4 Suitable Land			Established
	1.3.5 Permitting and Approvals Process			Established

2. DATA ASSETS & LIFECYCLE MANAGEMENT

Category I	Category II	Category III	Australia's Maturity
2.1 Commitment to Indigenous Data Sovereignty			Emerging
2.2 Domain Specific Datasets	2.2.1 Language, Arts, Culture & History		Established
	2.2.2 Medical		Advanced
	2.2.3 Geospatial		Advanced
	2.2.4 Environment & Resources		Advanced
	2.2.5 Economic		Established
	2.2.6 Enterprise & Business Data		Not enough data
	2.2.7 Scientific, Synthetic and Simulated Research Data		Not enough data
	2.2.8 Community & Citizen Science		Not enough data
	2.2.9 Demographic		Advanced
	2.2.10 Infrastructure		Advanced
	2.2.11 Public Administration		Emerging
2.3 Data Lifecycle Management	2.3.1 Data Creation & Sourcing	2.3.1.1 Standards & Provenance	Established
		2.3.1.2 Responsible Data Sourcing	Emerging
	2.3.2 Data Preparation & Curation	2.3.2.1 Data Quality & Validation	Emerging
		2.3.2.2 Annotation & Curation (for reusability)	Emerging
	2.3.3 Data Access & Use	2.3.3.1 General Use Access	Emerging
		2.3.3.2 Availability of Government Data	Established
		2.3.3.3 Restricted Access – Copyright/IP	Emerging
		2.3.3.4 Offshore Data Access (trusted transfers)	Established
	2.3.4 Data Stewardship & Assurance	2.3.4.1 Data Retention & Archiving	Emerging
		2.3.4.2 Data Deletion & Oversight	Emerging

3. MODELS & APPLICATIONS				
Category I	Category II	Category III		Australia's Maturity
3.1 Models	3.1.1 Model Development	3.1.1.1 Computer Vision		Advanced
		3.1.1.2 Computer Audition		Emerging
		3.1.1.3 Computer Linguistics		Established
		3.1.1.4 Robotics & Physical AI		Established
		3.1.1.5 Forecasting		Established
		3.1.1.6 Discovery		Emerging
		3.1.1.7 Planning / Optimisation		Emerging
		3.1.1.8 Creation / Generative		Emerging
		3.1.1.9 Culturally & Nationally Inclusive Models		Emerging
	3.1.2 Model Adaptation & Alignment	3.1.2.1 Domain Adaptation		Established
		3.1.2.2 Cultural and Linguistic Alignment		Emerging
	3.1.3 Model Tooling			Emerging
	3.1.4 Model & Agent Orchestration			Emerging
	3.1.5 Safety and Value Alignment			Not enough data
3.2 Applications	3.2.1 General Applications			Advanced
	3.2.2 Sector-specific Applications			Established
4. INNOVATION & ADOPTION				
Category I	Category II	Category III		Australia's Maturity
4.1 Innovation	4.1.1 Support & Investment Availability			Emerging
	4.1.2 AI Native Companies			Emerging
4.2 Rate of Adoption	4.2.1 Private sector adoption	4.2.1.1 Large Enterprises		Established
		4.2.1.2 SMEs & Startups		Established
	4.2.2 Public Sector Adoption	4.2.2.1 Government Adoption		Emerging
		4.2.2.2 Defence & National Security		Established
	4.2.3 Public Interest Adoption	4.2.3.1.1 Civil Society Adoption		Emerging
		4.2.3.1.2 Research & Academia Adoption		Established
4.2.4 Inclusive AI Adoption			Emerging	
4.3 Culture of Adoption	4.3.1 Discerning Adoption			Established
	4.3.2 Trust in AI Deployment	4.3.2.1 Trust in Public Sector		Emerging
		4.3.2.2 Trust in Private Sector		Emerging
		4.3.2.3 Trust in Public Interest Sector		Established
5. SKILLS				
Category I	Category II	Category III		Australia's Maturity
5.1 Skills for building AI infrastructure and developing AI	5.1.1 Building Physical AI Infrastructure			Advanced
	5.1.2 Building Accelerators (AI Chips)			Emerging
	5.1.3 AI Research Skills			Established
	5.1.4 AI Development & Application Skills			Emerging
	5.1.5 Research and Development Capabilities (translation)			Emerging
	5.1.6 International AI Talent Collaborations			Emerging
5.2 Skills for Deploying & Maintaining AI	5.2.1 Business and Commercial Skills			Established
	5.2.2 Interdisciplinary and Domain Expertise			Not enough data
5.3 Skills for Governing & Securing AI	5.3.1 Assurance and Risk Management (safety, bias, explainability)			Emerging
	5.3.2 Cybersecurity and Technical Robustness			Established
	5.3.3 Policy and Legal Skills			Established
5.4 Skills for Living with AI	5.4.1 General Public AI Literacy and Engagement			Emerging
6. GOVERNANCE				
Category I	Category II			Australia's Maturity
6.1 Government Strategy	6.1.1 National AI Strategy and Leadership			Emerging
	6.1.2 Policy Coherence			Emerging
6.2 Legal, Regulatory, Standards & Assurance Frameworks & Capabilities	6.2.1 Legal & Regulatory Frameworks			Established
	6.2.2 Ethics, Standards & Assurance Frameworks			Established
	6.2.3 Regulatory and Oversight Capability			Emerging
6.3 Institutional Capacity to Govern AI Deployment	6.3.1 Public Sector Institutional Capacity			Emerging
	6.3.2 Private Sector & Public Interest Institutional Capacity			Emerging
6.4 Civic Engagement and Democratic Legitimacy				Established
6.5 International Engagement	6.5.1 Influence and Norm Shaping			Established
	6.5.2 Access and partnerships			Emerging