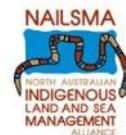


A DIGITAL FUTURES ROADMAP FOR NORTHERN AUSTRALIA'S INDIGENOUS LAND AND SEA MANAGERS

APRIL 29TH 2022 WORKSHOP REPORT



ABOUT THE WORKSHOP

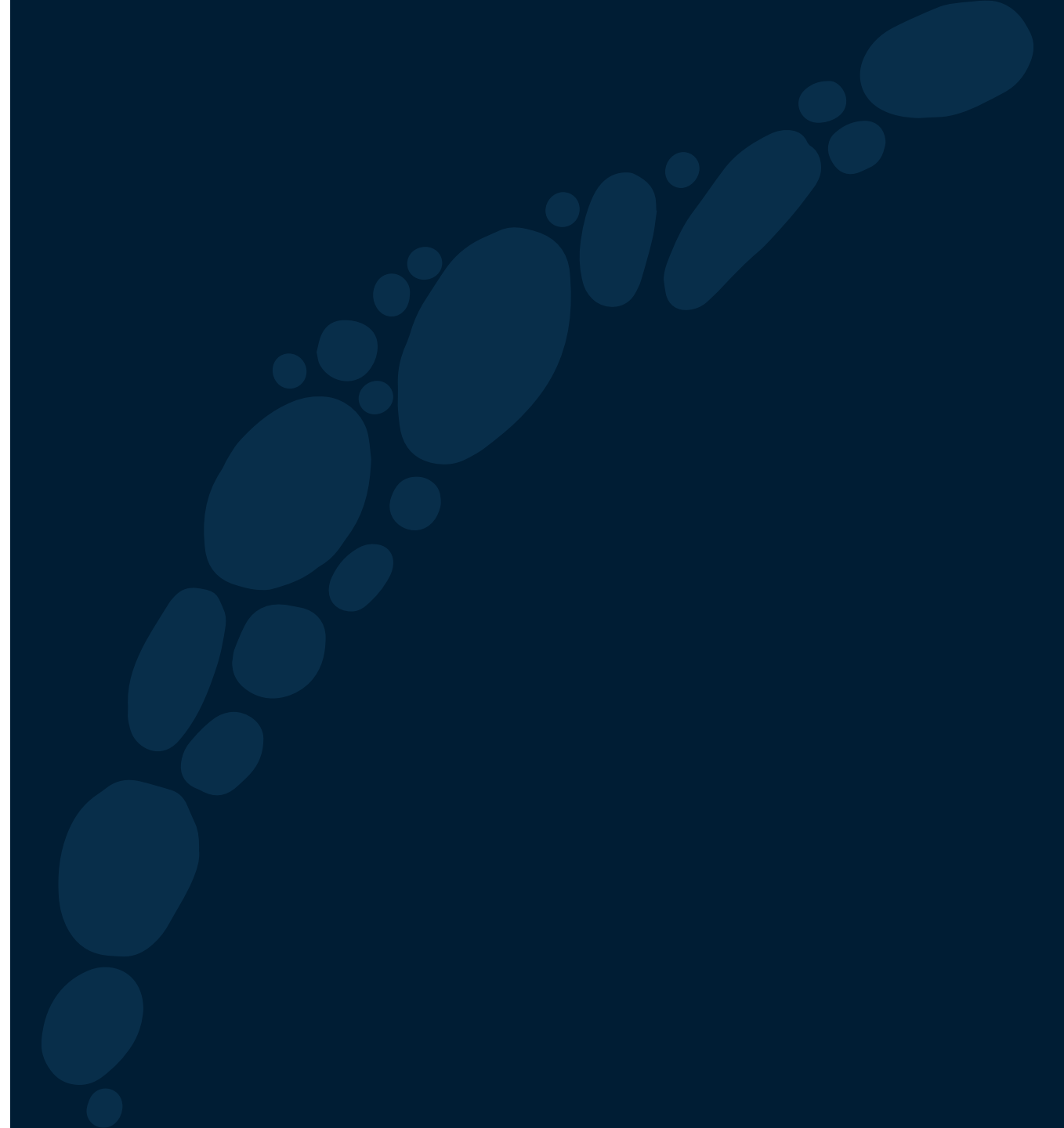


Data and digital technologies have become part of people's everyday lives, all around the world.

Indigenous-led partnerships and pathways can empower Indigenous people to take advantage of data and digital technologies. Land and sea management is a high potential domain for this.

The benefits such opportunities provide would flow to communities and Country, workforce and socio-economic development.

The Digital Futures Roadmap for Northern Australia's Indigenous Land and Sea Managers workshop sought to identify opportunities where Northern Australian Indigenous land and sea managers and enterprises can become high-value participants in the digital economy and consider a roadmap that would achieve this over the next 2 – 5 years.



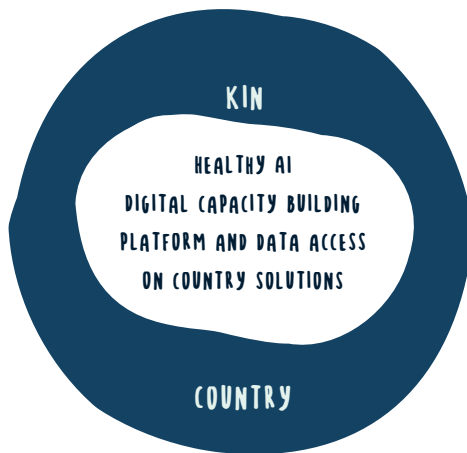
WHO WAS THERE

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Name:	Organisation:	Name:	Organisation:	Name:	Organisation:
Mike Battaglia	CSIRO	Larisa Copeland	Telstra	Tianji Dickens	Microsoft
Barry Hunter	Senior Indigenous Leader	Emma Burns	Microsoft	Dante Rodriguez	
Ashley Leedman	DAWE	Erica McCreedy	NAILSMA	Mikeala Jade	InDigital
Jennifer McDonald	CSIRO	Joel Beamish	Defence	Chris Taylor	Telstra
Erin Levey	First Nations Capital	Michael Douglas	NESP	Chris Bourke	CSIRO
Damien Burrows	NESP Marine	Cathy Robinson	CSIRO	Darryl French-Majid	White Box
Cass Hunter	CSIRO	Jackie Coates	Telstra Foundation	Vicki Norton	
Ben Guransky	Telstra	Ricky Archer	NAILSMA	Darren Menachemson	ThinkPlace
Chris Chilcot	CSIRO	Andrew Hoskins	CSIRO	Brodie Steel	ThinkPlace
Loretta Willaton	Telstra	Justin Middler	Microsoft	Mikaela Mbonzi Geach	ThinkPlace
Sean Moran	DAWE	Brad Moggridge	University of Canberra		
Grant Nay	DAWE	Justin Perry	NAILSMA		

VISION

Empowering local Indigenous people to use data, AI and digital technologies to adaptively manage Country



WHAT COULD THIS LOOK LIKE?

A focus on local priorities

- Driven from local engagement, priorities and partnerships (ownership from Indigenous people), with key decisions being made close to communities
- Embracing local practices
- A focus on inclusion and self determination
- Profitable - not reliant on ongoing funding
- Long term support for initiatives (don't just introduce initiatives and cease support after a few months or years)
- Conscious that community workloads are already full
- A balanced approach that shows benefits and sound outcomes for community

Indigenous led pathways

- Indigenous-led governance and control of data collection, management and use
- Indigenous data sovereignty (who owns information & how it is used)
- Indigenous ownership in the process or we will end up with a situation where it is done for communities rather than with
- Metrics of Indigenous success needs to drive process

Supporting local Indigenous economies

- Data tools are available - understand the platforms that can achieve data-share and analytics, with the appropriate codes around data usage
- An approach to data collection, there needs to be an engaged skilled and competent workforce to be able to interact and use technology.
- Technology not just for service providers, but that also benefits users and community – including environment, social, economic components
- Learn from what others have done to support creation of governance, operation and use of data

Investing in digital inclusion pathways

A focus on skills development, supporting technology and data with learning platforms that help build local capability and knowledge

- Help communities to engage with the data technologies available
- Solutions that are effective for both the Indigenous Land and Sea Managers and those they are reporting to/being funded by.
- No over-onerous monitoring and evaluation

GUIDING PRINCIPLES

Consultation with local Indigenous land and sea managers across Northern Australia highlights five priorities to guide development towards Indigenous digital economy.

Kin-country-centred design

Locally defined economic, cultural, environmental outcomes is core to Indigenous engagement with digital technology

Reflecting local skills & community readiness

Requires assessment of governance, digital skills and interest in data and digital technology to help care for country

Negotiated digital partnerships for impact

Co-design with partners who are committed to long-term relationships that focus on sharing skills and knowledge that deliver local and negotiated impact

Support by appropriate digital infrastructure and governance

Includes sufficient technical and data support and protocols for data collection, curation and benefit – including sovereignty and informed and ongoing consent

Empowering dialogue between data and Indigenous Knowledge

Data and digital technology partnerships need to be accessible and functional for local Indigenous communities and compliment local knowledge and Indigenous land management practices

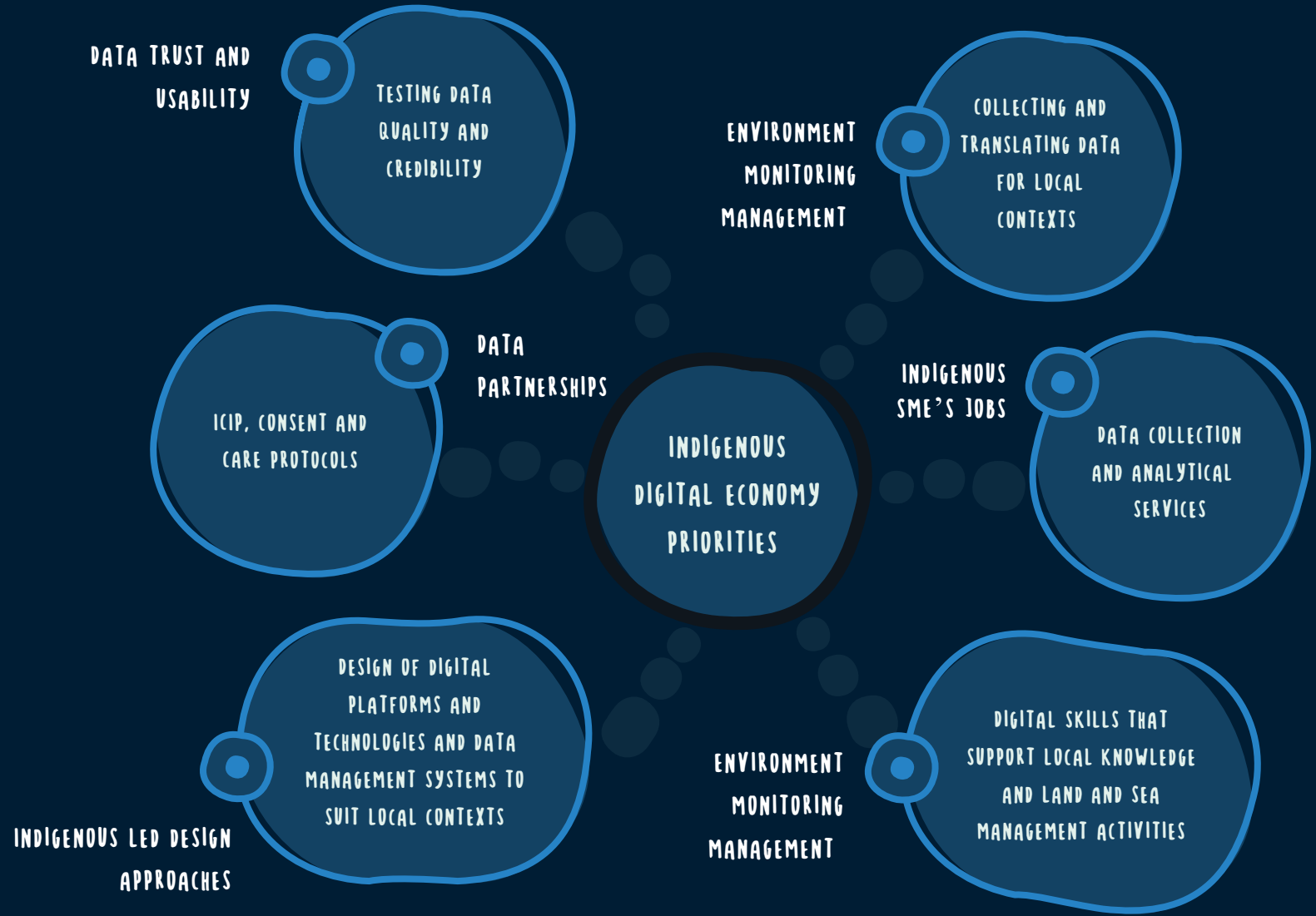
WHAT ELSE IS CRITICAL TO A ROADMAP?

INSIGHTS FROM CANBERRA WORKSHOP

- 01 Diversity of opportunities that are pursued**
- 02 Indigenous-led**
- 03 Inclusive - across abilities, gender, geography**
- 04 A quadruple bottom line approach that considers financial, social, environmental and culture**
- 05 Solutions and capabilities are designed for people who are using them**
- 06 Deep listening and a willingness to respond**
- 07 Safety to allow authentic collaboration and sharing of learnings**

THEMES TO POWER THE ROADMAP

Initial synthesis emerging out of consultation with local Indigenous land and sea managers across Northern Australia



WHAT OTHER THEMES WILL MAKE THIS HAPPEN?

Monitor the impacts

- Environmental management and monitoring
- Biodiversity improvement and monitoring
- Digital inclusion impacts including the confidence to use technology and train others

Consider a range of opportunities

- Look at how we analyse and use data in a way that translates it and feeds into reporting frameworks
- Look at how to support carbon credits and offsets
- Geotagging service
- Create data narratives endorsed by community
- Support Indigenous eco-tourism
- Women and girls and digital inclusion is a priority
- Data governance and data mapping to automate data aggregation which makes insights understandable from bottom up
- Recognising both top-down and bottom-up opportunities in the digital economy for Indigenous land and sea managers

Make it Indigenous-led

- Building skills in the community that can drive from-the-ground research priorities
- Put communities in control of the answers
- Indigenous-lead research projects, including through research partnerships
- Sharing, consultation and community input from all areas is critical - having Indigenous-led input and control
- ICIP understanding. Roadmap for legislation that protects Indigenous data assets

Agility - start small, experiment, iterate and scale

- Build in reflecting on what has worked, what hasn't and the actual problem to be solved – enable people and organisations learn from failures
- Create a safe and trusted environment/culture to ideate, experiment and innovate
- Learn from past success and failures to guide future economic partnership pathways
- Build the trust to partner well and engage with lessons learnt from trying new things together. A small number of pilots to begin with

WHAT IDEAS COULD HAVE IMPACT?

The workshop identified several high-priority areas which could contribute to a future Indigenous digital economy



WHAT IDEAS COULD HAVE AN IMPACT?


Geotagging

- Cultural knowledge into existing content - any content that is produced has a geographic tag
- Brings in the locals and the local community knowledge and the people element and the people that know
- Add relevant information and works across different sectors and needs
- Being able to go out and support the level of capacity - the NRM groups

Traditional knowledge blockchain

- Tool for maintaining the integrity of traditional knowledge and narratives.

Confidence to use digital technology

-  • Build confidence to use technology and train others to monitor impacts of land and sea management activities
- Supporting digital inclusion pathways, particularly for women

Storytelling

- Using data and digital tell stories about country and impact of Indigenous ranger work
- Supporting and educating - teaching kids and adults to use creative and digital skills for the storytelling (including animation)
- Focus clearly on tangible, realistic stories that we can work on in the place that its being told
- Local context makes this meaningful and engaging to audiences
- Currently reporting can be quite mundane
- Applying cultural lenses as well as commercial, academic or regulatory lenses for raw data to provide different insights and knowledge.


Having Indigenous knowledge acknowledged by Traditional Owners

- Not trying the 'value' the traditional knowledge with the current 'data' value system.
- Traditional Owners need to be resourced to drive the process from the start to finish.

Organisational capacity building

- Group skills so you have multiple people to take on different roles
- Building group skills on-Country
- Support capacity and delivery
- People want to see what skills they are personally acquiring, there is also a real desire to be able to support all those different parts of the puzzle
- Build capacity through on-Country training that are connect with and are supported by existing programs.

Support for individuals

-  • Support to capture and manage data, including demonstrating the value of data
- Map and guide how practitioners capture and use the data
- Look at what gaps are in capacity and resources to manage data
- Address the needs/put in the mechanisms to support capacity growth - e.g. mentors



Indigenous Data

- The language for data is different to the language of knowledge
- Need to understand and educate on Indigenous data and how it should be collected, managed, used and understood
- Consider an Australian Information Security Manual (ISM)-type blueprint equivalent for collection of data from Country and permissions, standards and baselines for data
- Developing a baseline that assesses health of Country
- Data management and storage on Country with updated cultural friendly protocols that are supported by all parties
- Maintaining data, and the opportunities that arise from this data on Country, with the right provenance and protocols
- Community control over corporate and Government access and permission to collect and use data on Country
- Gap analysis – what assets are not protected and how are others protected



Data Collection

- Data collection happens in many places in many ways and using many disciplines. It is a skills gap to be addressed in the context of the roadmap
- Need a way of turning data into decisions – this will require skills development, platforms, and technology support
- Citizen science approach - simple data entry that anyone can access, to contribute to wider areas of research and stories
- The data needs to tell a story
- The work that rangers are doing is farther and wider now, creating more scope to collect data and engage in meaningful participation to monitor and manage country
- The investment in Indigenous Protected Areas (IPAs) is encouraging and this need to continue to grow
- Data infrastructure and governance protocols central reference/discoverable, and local storage/permissions

- Data governance and data mapping to automate data aggregation which makes insights understandable from bottom up and down opportunities/processes
- Data ownership and custodians for input, management and ownership over the data collection and processing



New ways, new scope for collection and ingestion

- New ways of collecting data – what, how, who: citizen data, drones, camera traps, AI
- Coverage of land, water & sky
- Avoiding data harvesting ('the uberfication of Indigenous NRM')
- We need to create end-to-end data collection, processing and translation pipeline that supports Indigenous knowledge governance and data sharing protocols



A Healthy country AI digital toolbox

- Healthy country AI 'portal' for appropriate tools, training and support for indigenous land and sea managers.
- Example of tools for data collecting, storage, visualization and analysis designed by and for IL&SM and training.



Standards and digital inclusion pathways and protocols

- Local cultural protocols
- In language
- Pitching ideas to Elders to ensure cultural authority and validation
- Provide culturally safe space for Indigenous women to participate in digital technologies and data management systems



Cultural typology impact - landscape, scale, sharings

- Developing clear ideas about what can be shared for benefit sharing. Matching standards and protocols for data.



Hackathons

Safe spaces to experiment

- Creating a base of lessons, knowledge, stories
- Mapping relationships



“Data Dilly Bag”

Women-led local pilot to form a pathway towards ongoing opportunities (jobs, skills, empowerment)

- How can we extend the impact to children/girls?



On-Country data cloud

- Edge cloud that enables data protection on-country but enables data sharing when appropriate
- Data management/storage on-country - a collaborative platform in the cloud for knowledge capture & sharing
- An indigenous cloud platform
- Data management/storage on-Country – centrally standardised, locally stored/managed



Remote data hub

Social enterprise, digital tools and trying to enable casual labour opportunities in spatial analytics in remote Australia. Indigenous owned.

- Ability to connect to multiple organisations. Hubs to facilitate the work.
- Facilitates training, labour hire digital work, digital career pathway on-country.



Curricula, skills on-country

- Maths & literacy = digital literacy
- FOR: Demonstrate utility of digital – vision, encourage engagement, skill building, understanding, career-building
- Which tenancy? NAILSMA? Guest in others
- Indigenous-developed resources and training programs



Equitable Access Agreement

- What do people’s community's really want, not what government, corporate thinks they should get.

ROADMAP PARTERSHIPS:

WHAT NEXT?

Workshop participants discussed how a roadmap, and the ideas and aspirations expressed during the conversation, could be taken forward



WHAT ROLE MIGHT PARTICIPATING ORGANISATIONS PLAY?

Some potential roles that partners could play.

CONNECTION ROLE

- ✓ **Build new coalitions** where the combination of Indigenous Knowledge/approaches and digital/data form a unique contribution to intractable problems
- ✓ **Identify/onboard partners or other parties** who could benefit from a Indigenous Knowledge and digital/data mix and make high-potential linkages
- ✓ **Promote the program** to build awareness, networks and a platform for trusted innovation

DEMAND ROLE

- ✓ **Identify business opportunities** in your business or supply chain where the mix of Indigenous Knowledge/approaches and digital technology creates opportunities for shared value
- ✓ **Create new procurement settings** that stimulate sustainable demand or remove barriers

SUPPLY ROLE

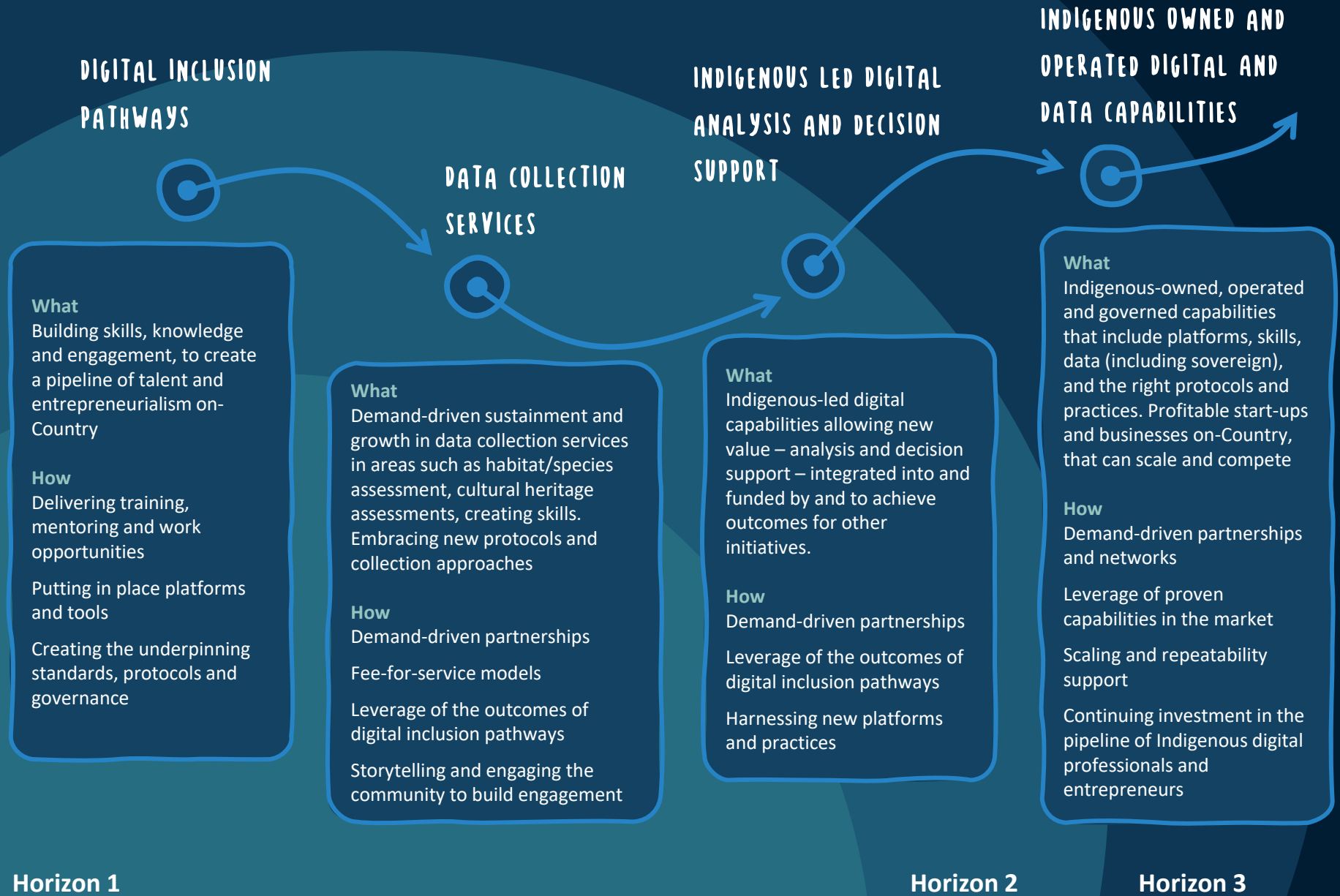
- ✓ **Contribute to the growth of on-country skills** and a future skills pipeline through training, education and experience opportunities that then translate into a high-capacity workforce
- ✓ **Provide the platforms, technology and data** needed to power new application of Indigenous Knowledge and approaches

ENABLING ROLE

- ✓ **Provide funding** to kick-start on-country startups and new business models
- ✓ **Provide access to resources on-country** that make Indigenous-led digital business models feasible for their first 1 – 3 years of operation

WHAT COULD A ROADMAP LOOK LIKE?

We welcome your input on potential next steps



Horizon 1

Horizon 2

Horizon 3

INSIGHTS OR QUESTIONS

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For any insights or questions about this Roadmap and the Healthy Country AI and digital training program please contact Cathy Robinson – Catherine.Robinson@csiro.au or Justin Perry – Justin.Perry@nailsma.org.au

Citation for this report: Robinson, C.J., Archer, R., Dickens, T., Coates, J., Perry, J., M. Douglas (2022). Indigenous Digital Futures Roadmap for Northern Australia's Indigenous land and sea managers. Workshop report.

