

Responding to Disruption: A System of Systems Approach for Digital Transformation

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Introduction

- Responding to rapid change and disruption is Business as usual practice for organisations, businesses, and individuals globally.
- Especially relevant for digital transformation efforts, where success is impacted by considering unanticipated issues, events, users and needs.

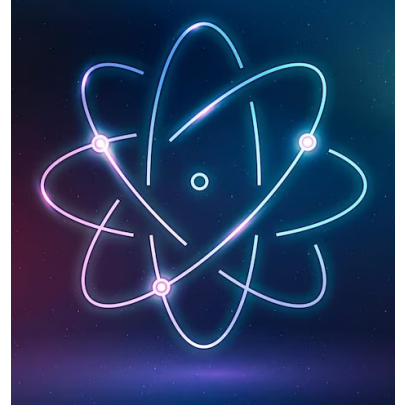


Purpose

- This presentation highlights the importance of understanding the multidimensional needs of stakeholders and their digital capabilities, supports the success of a public sector service offer.
- This presentation will share:
 - A framework and questions to ask to support digital transformation,
 - Case study for the use of the framework,
 - Applying to disruption,
 - Best practices from real world application of system of systems approach.



Responding to disruption



- Quick and holistic responses to complexities and crisis are necessary.
- Especially across large public and private sector organisations who need to rapidly implement policy, provide new and update existing digital services and make changes to their service models.
- Research by McKinsey (2022) identified during COVID-19 that organisations who considered broader stakeholders and changed their services as needed by applying a systems approach.

Systems definitions

Systems

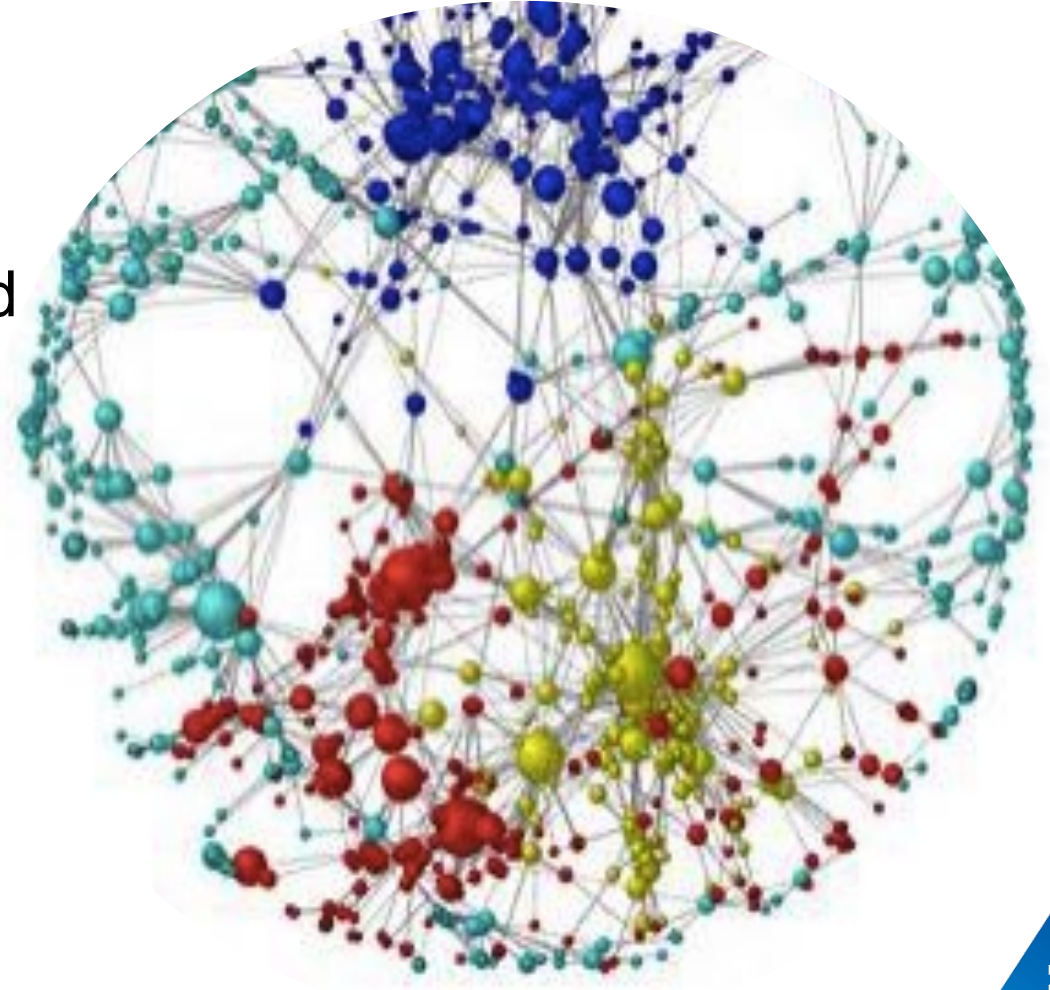
- Interconnecting network of interacting and interrelated elements acting accord to rules to form a whole.
- Government is an example of a system, due to the various actors, actions and stakeholders.

System of Systems

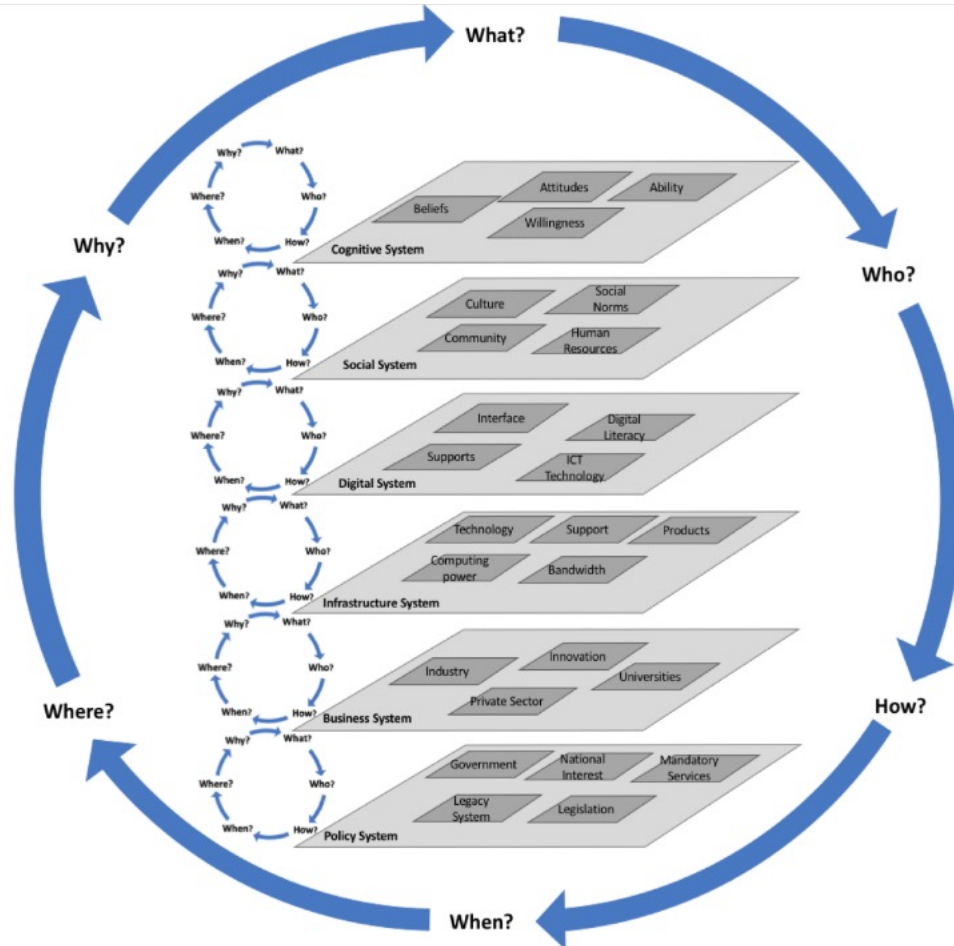
- Collection of task-oriented systems working together to create a new more complex system offering additional functionality and performance.
- The whole is greater than the sum of its parts.
- Broadly Government and their agencies are an SoS due to each of their relationships/interactions creating greater complexity.

What are systems approaches?

- The Australian Public Sector is an example of a living, breathing “ecosystem” which must be understood across the shared and disparate connections, relationships and interactions across agencies and with shared clients to ensure they are effectively and efficiently performing its role.
- A primary example if the COVID-19 response.



A System of Systems approach to Digital Transformation – model and case study



- Foundations in place.
- An established approach used to guide digital transformation in a Large Government Agency in Australia.
- Utilises the 5 W's and 1 H to understand the current state and future requirements of different stakeholders across their different systems.

Applying to disruption: What the world saw during COVID-19?

- COVID-19 impacted society in a significant way, not before seen in the globalised world.
- What we saw was:
 - More people staying home,
 - Working from home,
 - eCommerce increase,
 - Digital transformation - availability of online services for previously non-digital,
 - Higher demands on healthcare, which needed to be adaptive,
 - Coordinated international responses (e.g., World Health Organisation),
 - Coordinated Australian Federal and State government approach including pivoting agency functions.

The complexities

- Using a systems approach demonstrated a number of complexities and showed opportunities to overcome, starting with;
 - How to identify different levels of digital capabilities across users and stakeholders?
 - What are the needs and expectations of different stakeholders?
 - What challenges and opportunities arise from changing service offers?
 - How and where education and support should be placed?

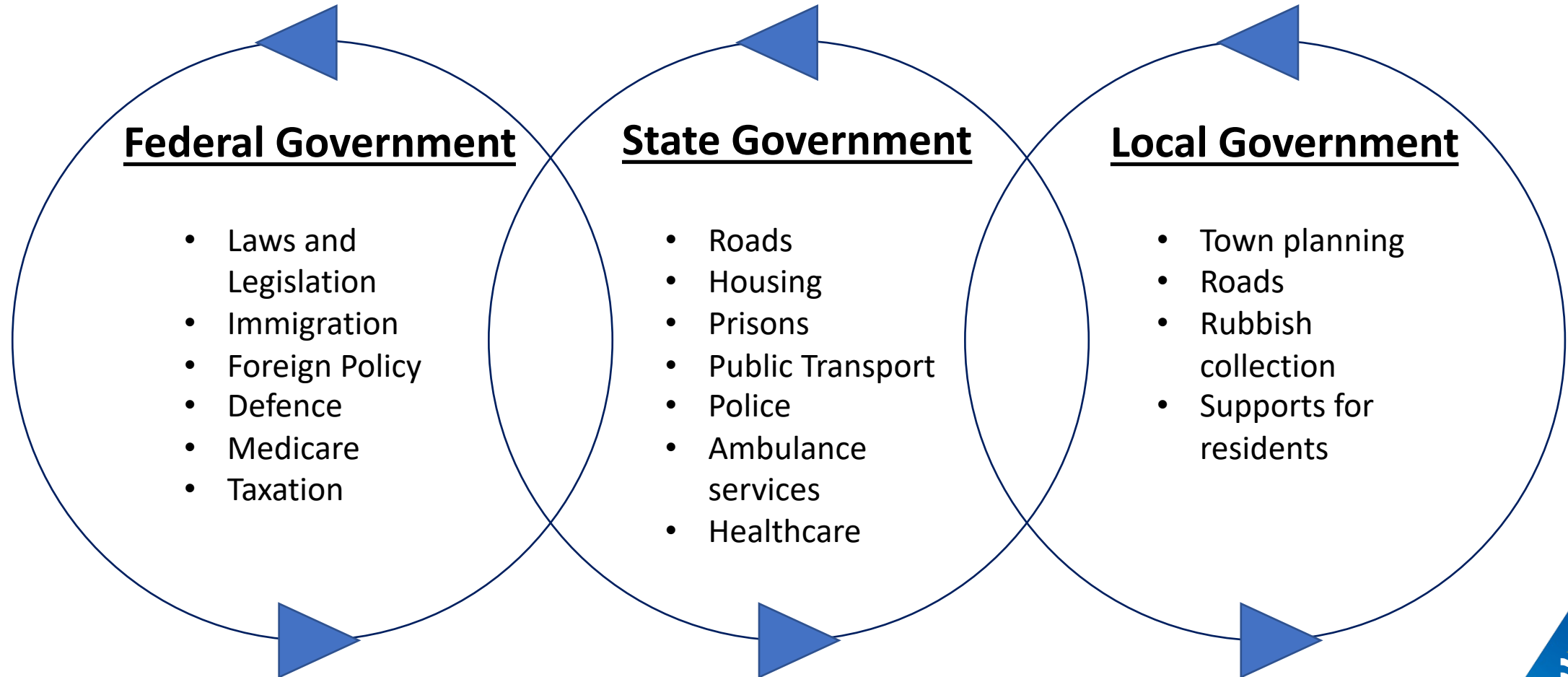


A Whole of Government Response

- This crisis demonstrated a coordinated systems led approach for how the Australian Government and Government Agencies responded to environmental conditions;
- When Covid-19 impacted Australia, the federal government worked collaboratively with with state and territory governments to:
 - Share information with the community,
 - Ensure there is a consistent and integrated response across every state and territory.



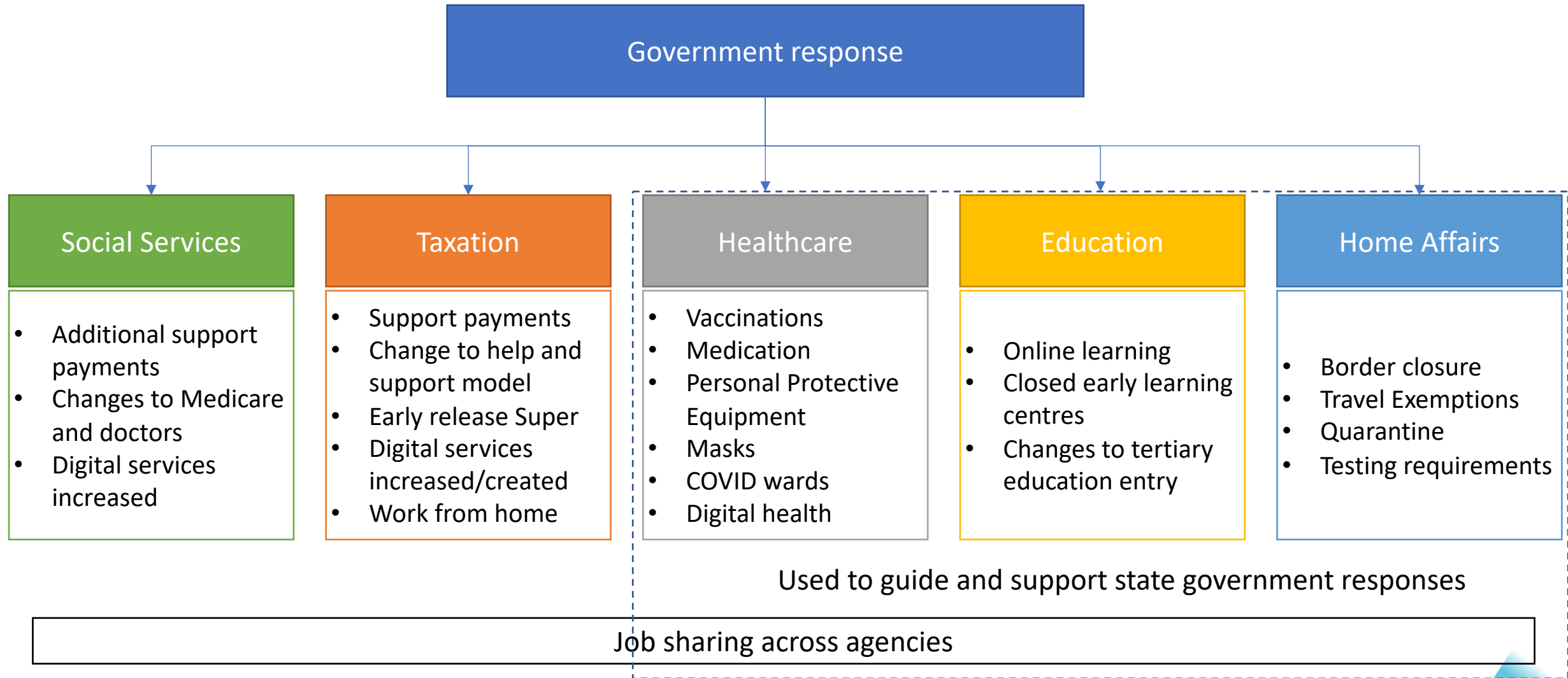
Role of different levels of government



A Whole of Government Response

- Now let's review the Whole of Government response. This occurred across multiple key agencies, including;
 - Social Services,
 - Healthcare,
 - Taxation,
 - Education,
 - Home Affairs.
- State governments, Local governments and their agencies were key to leading the coordinated government response.



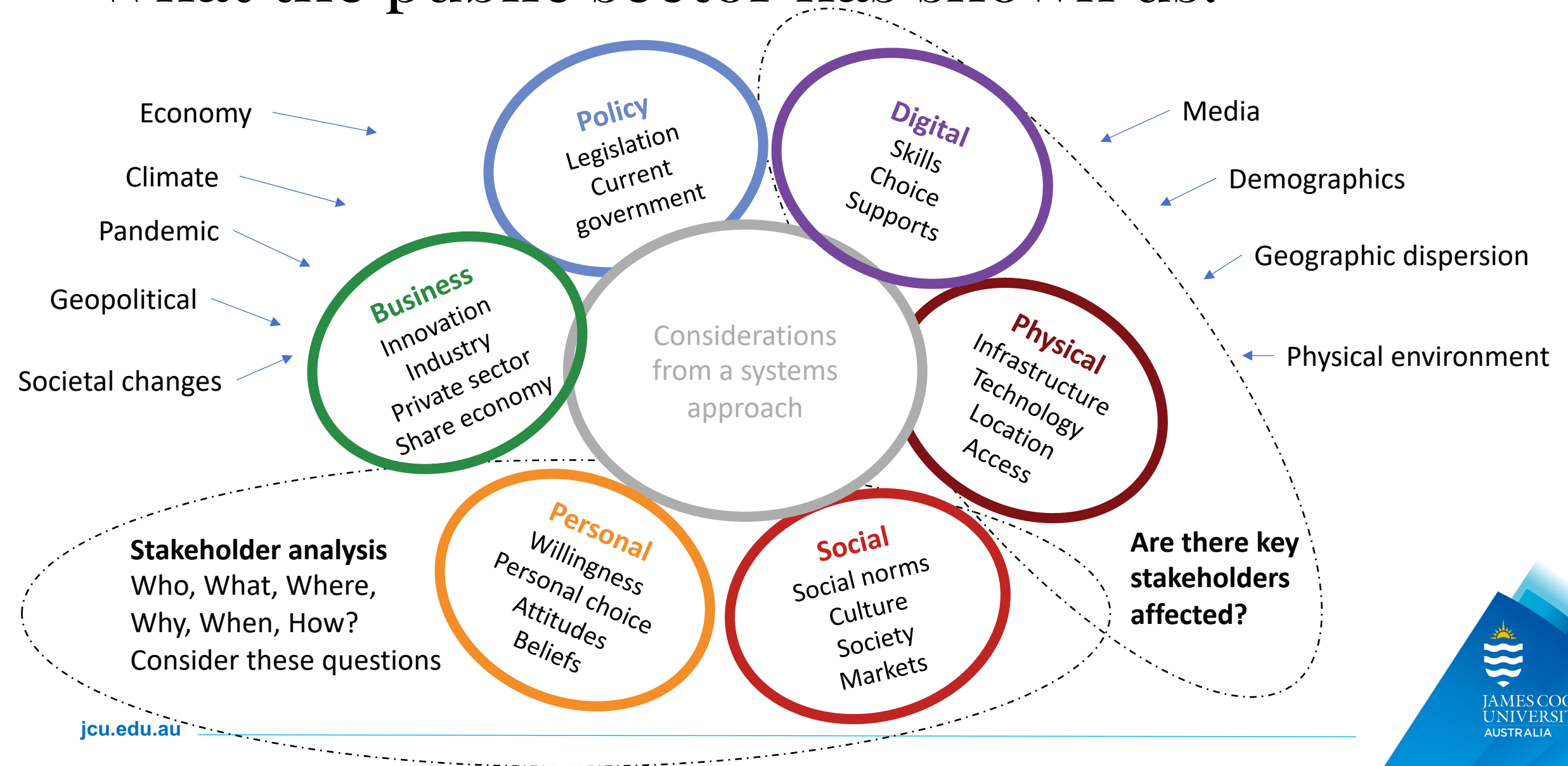


COVID-19 responses in government demonstrated the importance of embracing and valuing different voices and employing and promoting empathy in governments and agencies work.

What the Public Sector case study has shown us?

- We need to consider stakeholders role across multiple systems and how they work individually and part of a SoS.
- Whole of Government approaches are vital to crisis response.
- Advanced data analytics are important to developing the response.
- Identifying barriers to adoption of technological changes across government and service offers changes for clients.
- Responding to disruption in this case was enabled by technology to support the rapid deployment of new services and support tools.

What the public sector has shown us:



How does this demonstrate a coordinated approach?

- The Australian Government approach is an example of how understanding the various components of the system, supports the success of a public sector service offer.
- This includes rapid digital transformation.
- Reviews of the application of the systems approach identified potential improvements to the application, this included leaders changing their management of the changes and the engagement with employees and users.
 - Continuous improvement in the digital transformation processes.

Learning from experience

- A key success measure involved learning from issues and hurdles experiences, including;
 - Resolving issues of:
 - Misalignment between State and Federal government authorisations,
 - COVID-Safe Mobile App – leading to state government App development,
 - State border closures dictated by the state government agencies,
 - Vaccine procurement,
 - Vaccine and mask mandates,
 - Mandatory quarantine periods.
- Development of a lessons learned process to understand where opportunities for improvements were shared across OECD countries.
 - Preparedness,
 - Transitioning to digital services,
 - Speed of reaction and impacts on the long-term economic situation,
 - Transparency of decision-making.

Implications for Systems Engineering

- A systems approach can be used for;
 - Crisis responses,
 - Digital transformation efforts,
 - Understanding organisational requirements.
- Role in Systems Engineering;
 - Supports the reduction of risks,
 - Improves the stakeholder participation including understanding of the different user needs and expectations,
 - Improved project lifecycles,
 - Development of more adaptable and resilient systems,
 - Better documentation and governance processes.

Best practice for digital transformation

Best practice

- Proactive approach
- Cross border cooperation
- Supports for vulnerable people and groups
- Multi-level governance
- Strengthening health systems
- Transitioning to digital services

Other jurisdictions

- Reactive response
- Different policies across national jurisdictions
- Fragmented decision-making
- Differences or lack of healthcare options and policies
- Maintaining legacy services

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Any Questions?