the Front Project

What is systems thinking? How can it be used?

October 2022

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The *Early childhood education and care in Australia* paper defined the challenges and opportunities that exist within Australia's Early Childhood Education and Care (ECEC) system. As we have outlined, Australia's ECEC system is complex and continues to evolve with the changing needs of children, families, and society. The most significant issues facing the ECEC system are:

- ensuring equity in access and participation to achieve high participation rates
- ensuring outcomes for children which support social and emotional development, alongside their education/readiness for school
- managing the ECEC workforce in a way which addresses shortages, high levels of attrition, difficulties in providing professional development, regional and rural recruitment/training, and builds a diverse, culturally competent workforce
- reducing system complexity to improve service access and navigation
- improving system coherence to view the 'system' as a cohesive entity so that it can better align with other sectors, such as health and education.

This paper provides an overview of systems thinking and a guide for leveraging change within a system. When combined with the previous paper on the ECEC system within Australia, this will provide a foundation for the subsequent exploration of a system stewardship model which follows. It will also highlight how in this circumstance this approach represents the most comprehensive way to respond to the challenges and opportunities identified above.

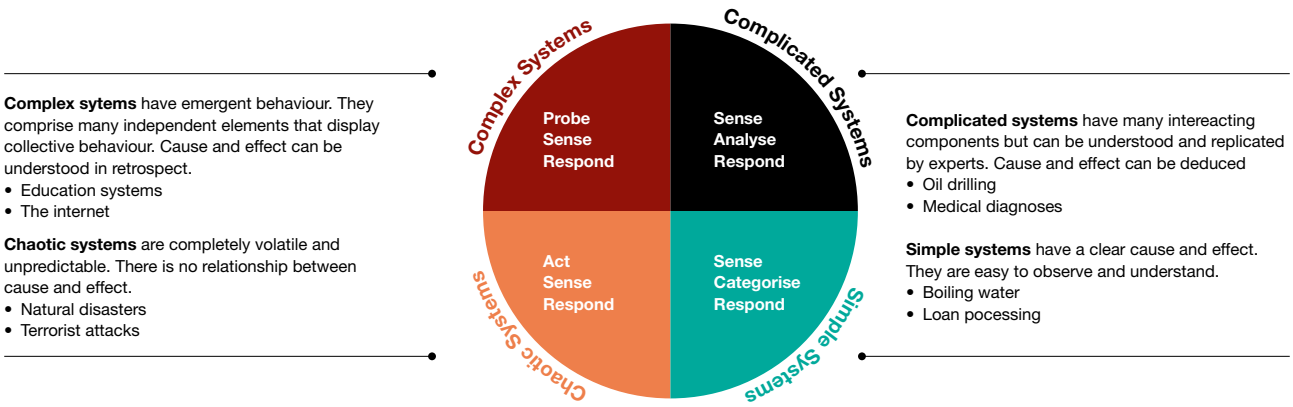
What is a system?

A system can be defined as an *interconnected* set of organised *actors* that work together to produce a characteristic set of behaviours that achieves a system's *purpose* (Meadows 2008).

Figure 1: System components

Figure 2: System properties

Properties of systems



Systems exhibit different properties. The Cynefin model (depicted above) suggests four key groupings of system properties: simple, complicated, complex and chaotic. Systems may adopt different properties at different times.

Simple systems are stable and easy to understand. There is a clear path to identify cause and effect, which means problems are usually easy to identify and solve. They are often process oriented, whether physical like boiling water or administrative like processing loans. Managing simple systems typically requires assessing and categorising the facts of a situation. Decisions are then made on these facts, usually based on best practice.

Complicated systems have a greater number of interacting components. While they are more difficult to understand, they usually operate in patterned ways. Appropriate management often relies on expert knowledge to assess the best course of action. However, there may be several possible solutions that require analysis before selecting the best response.

Complex systems are more difficult to predict because of their emergent and often dynamic or reactive behaviours. They may operate in patterned ways, but interactions are constantly changing. The same starting conditions may result in different outcomes depending on the interactions between the actors in the system. As interactions adjust, its actors change in relation to each other. Management often relies on adaptive leadership and diverse thinking to respond to the emergence of new challenges and opportunities as the result of change.

Chaotic systems are unpredictable. Management may require preventive and restorative actions which may not always completely address the challenges experienced due to a chaotic event.

ECEC as a complex system

Complex systems are particularly evident in the following circumstances:

- The problem is not completely understood, so solutions may not be evident or appear to be fully realisable.
- There is significant diversity of opinion which may involve conflict between stakeholders and experts.
- The problem and the broader context are interconnected in diverse, dynamic and often unstable ways. The broader context is also likely to be complex, dynamic and unstable (such as a political system). This positions a complex system within a complex system.
- The goal for change within the system is to make broad, sustained change at large scale (Omidyar Group ND).

As the overview of Australia's ECEC system suggests, the system currently displays all these properties. Some of the complex problems identified in the paper demonstrate that the system is not working as well as it could be. Additionally, most identified solutions fail to sufficiently address the issues, largely because they fail to account for the whole of the system, focusing instead on an immediate problem.

The context within which ECEC operates is unstable and dynamic, with political and social systems having their own inherent complexities. Applying a systems thinking approach to Australia's ECEC system could address this complexity and guide the system towards desired outcomes.

Why use systems thinking?

Systems thinking is useful when attempting to improve **complex systems** (like Australia's ECEC system) because it enables us to see the whole picture, including the explicit (such as policies and funding) and implicit (such as mental models, power and relationships) factors that the system must navigate in order to deliver outcomes. The intent of working systematically is to create deep, sustained, and long-term change for greater impact.

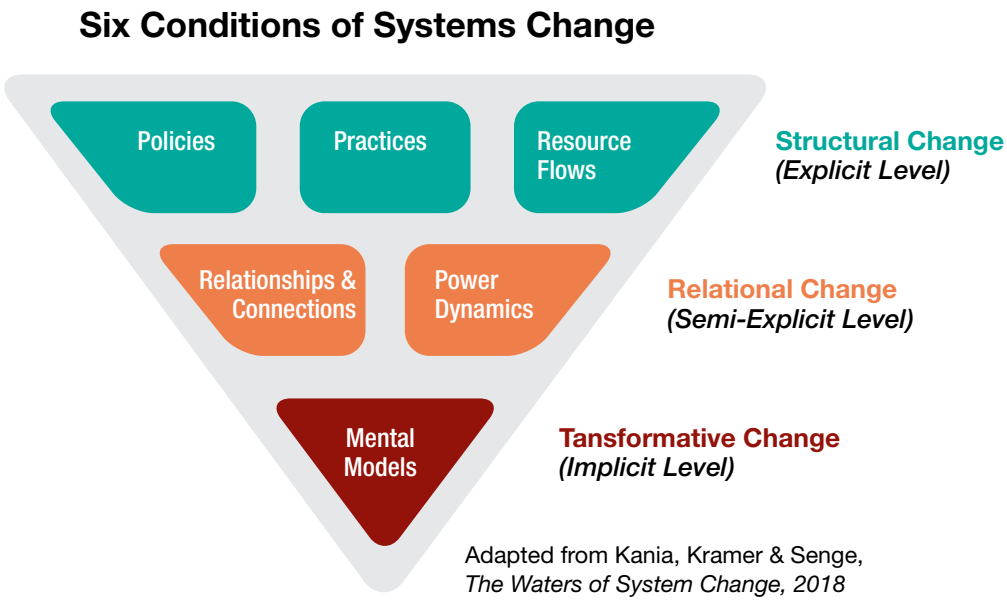
This model recognises that no one program, organisation or person can make long lasting change at scale. All parts of the system (the interconnected set of actors) have a role to play in creating better outcomes.

By acknowledging that systems are dynamic and that change is not linear, systems thinking provides a framework to look beyond the immediate problems. It guides actors or those working on system change to see underlying patterns, opportunities to leverage aspects of the system and ultimately to adapt as the system changes. Through this framework, it is possible to embrace the complexity of a system (such as the ECEC system) and work toward a healthier one (Omidyar Group ND).

System conditions

How systems are maintained and how they experience change is dependent on emerging conditions. This commonly used model categorises six conditions of systems change (Kania et al. 2018).

Figure 3: Conditions of systems change



Definitions of systems change conditions

Mental models

Habits of thought are deeply held beliefs and assumptions, which along with taken-for-granted ways of operating, influence how we think, what we do, and how we talk. Mental models underpin all systems and other conditions of system change.

Relationships and connections

This refers to the quality of connections and communication occurring among actors in the system, especially among those with differing histories and viewpoints.

Power dynamics

This concerns the distribution of decision-making power, authority, and both formal and informal influence among individuals and organisations.

Policies

These are governmental, institutional and organisational rules, regulations, and priorities that guide the entity's own and others' actions.

Practices

This includes activities undertaken by institutions, coalitions, networks, and other entities to improve social and environmental progress and help the system achieve its purpose. Also, within the entity, this involves the procedures, guidelines, or informal shared habits that comprise their work.

Resource flows

This accounts for how money, people, knowledge, information, and other assets such as infrastructure are allocated and distributed.

(Kania et al. 2018)

Creating change within systems

If a system is not producing the desired outcomes, the conditions of the system need to be changed. Identifying places in the system that may be amenable to intervention is necessary to achieve change and these places are known as leverage points. Leverage points can be powerful because a small change to a leverage point can create a ripple effect, resulting in larger change within the system (Meadows ND). Organisations that use a systems change approach, such as the Front Project, utilise a variety of methods to identify and understand leverage points and other aspects of systems that might be amenable to change.

Across systems there are several models and conceptualisations of leverage points. Leverage points in those models include information flows, rules, goals and paradigms as opportunities to affect change (Meadows ND). The leverage point with the greatest potential to affect change is a paradigm. This aligns with the mental model concept discussed above because mindsets are so essential to the way systems are maintained or changed.

In addition to working with leverage points, collaborating with others and supporting learning are important to affect change within systems. Working with others enables multiple actors from across the system to work collaboratively for positive change. Different actors may have access to different leverage points which can be used collectively to achieve change. Supporting learning within the system includes understanding the context, generating knowledge about what is and is not working, considering how things are changing, and using the learnings to adapt and improve the system (Abercrombie et al. 2015).

How we apply systems thinking at the Front Project

The Front Project draws on the development and practice of systems thinking for social change. Our systems thinking approach looks at the big picture to find out what we can do to ensure our ECEC system becomes the best it can be today and continues to deliver for generations to come.

We fill two distinct, and at times overlapping, roles to create impact. Firstly, as an actor and stakeholder we directly fill gaps in the ECEC sector (such as, upskilling the workforce) and as a system intermediary we build and develop the sector as a whole. Primarily, system intermediaries work to amplify the efforts of others.

Our experience in the ECEC sector has helped us develop the following systems thinking leverage points, which include:

- building and shaping narratives around ECEC
- contributing to shifts and major changes in the policy landscape
- supporting the sector's ability to innovate and influence
- increasing the number of professionals in ECEC
- increasing the awareness and demonstration of quality in ECEC settings.

As part of focusing on these leverage points, the Front Project implements the following activities to achieve systems change:

- **The Apiary:** the Apiary Fellowship leads collective action on complex systemic challenges in early learning underneath a shared vision for change co-designed with children and families. The Apiary brings together systems leaders and influencers around key system leverage points, building their capacity to understand and engage with different perspectives and complex systems.
- **Online Community and Upskill Program:** The Online Community is a place for early childhood professionals to build networks, combat feelings of isolation and grow professionalism and quality in a safe, virtual forum. The Upskill Program supports high achieving diploma-educated educators to complete university degrees to become qualified teachers, helping them to increase their impact and deepen their skillset around teaching young children.
- **Early Learning Impact Hub:** The Early Learning Impact Hub is comprised of an 'evidence to action lab' and an 'innovation lab' and focuses on policy and practice innovation. It will develop the sector's capability to collaborate and innovate, facilitate evidence into action and scale initiatives in ECEC.
- **Advocacy, Government Relations and Campaigns:** The Front Project will support and equip the ECEC sector, families and business leaders, along with the government, to confidently and collaboratively advocate for ECEC, ensuring that more voices form part of the public conversation.

More information about the Front Project's approach to systems change can be found on its website and its latest impact report.

Opportunities to change Australia's ECEC system

An opportunity to bring about change in a complex system such as ECEC in a way which meaningfully responds to the challenges and opportunities outlined here is to adopt a system stewardship approach. What makes the case for system stewardship so compelling is its ability to address many of the shortcomings that have resulted from the spread of market reforms against a backdrop of increasingly complex societal needs. The unique nature of human services, such as ECEC, means their system-wide management and delivery requires approaches which reflect the specific market forces at play. The paper *What is systems stewardship?* explores this concept in depth.

Reference list

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