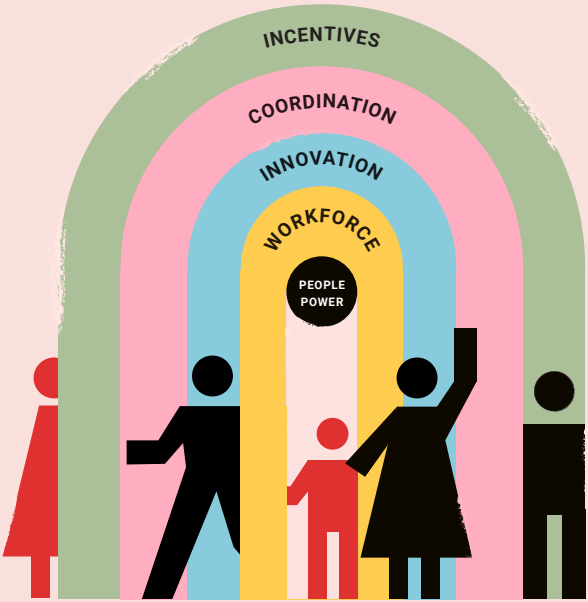
Social
R&D



Ecosystem Pattern Pack

People Power

Patterns to put people at the centre of social R&D decision making

Social R&D

Public set the future

Community members are engaged through deliberative processes to develop a preferred vision of the future.

Participatory budgeting

Funding allocation for innovation is made through a participatory and deliberative process.

Example: The City of Melbourne used a participatory process to allocate $5bn. This is one of the largest budgets distributed through a participatory process in the world.

Public accountability

Citizen panels with diverse membership hold researchers and innovators accountable for their work.

Long-view governance

Institutions that provide governance and co-ordination in the field, while focusing on outcomes decades down the line, with institutional memory that outlasts government.

Participatory innovation teams

Professionals and community members work together in innovation teams.

Lived experience innovation roles

New roles for community members to bring their lived experience to innovation processes, which include rewards in terms of money and learning.

Workforce

Patterns that build R&D capability and talent

Social R&D

Know-how

A body of knowledge about how to structure and practice innovation in a particular field.

Example: The wealth of knowledge about how to structure digital innovation.

Innovation education

Formal education that builds innovation capability along the R&D process.

Example: Medical degrees that build an understanding of medical research processes.

Connected workforce

A workforce with a shared identity, mission and knowledge base that's connected locally, nationally and internationally.

Example: The international vaccine development community, who worked together on Covid-19 vaccines.

Specialist knowledge media

Places and publications to share information about what works and what doesn't.

Example: Medical Journals

Clearinghouses

Centres that amass knowledge on what works and what doesn't.

Example: What Works Centres.

Ongoing professional development

Opportunities and requirements for people to keep learning as part of the job.

Example: Ongoing professional development requirements for accountants.

Known roles

R&D roles that people can aspire to, train for, and recruit into.

Example: Research scientist or lab technician.

Work exchanges

Opportunities to move between roles, academia and industry.

Example: The frequency of movement of people in Silicon Valley between industry jobs in and out of academia.

Graduate programs

Strong and direct pathways between education and industry.

Example: At-scale industry placement programs in Germany.

Popular media

Television, radio, magazines and social media that excite the general public about R&D and help them see themselves taking a role in it.

Example: 'Through the Wormhole' with Morgan Freeman (Netflix) features the research work of theoretical physicists and others in a way that's entertaining, compelling and thought-provoking.

Life dreams

Children and young people who dream of working in R&D because they've heard or read about it, and tell others.

Example: Popularity of games designer as an aspirational career for children and young people.

Physical proximity of innovators

Precincts, districts and suburbs that house innovators of the same kind.

Example: The technology districts of Palo Alto, California; or Silicon Roundabout in East London.

Talent pipeline

Cohorts of innovators ready to take on new research and development roles.

Innovation

Patterns that support the innovation journey from idea to implementation.

Social R&D

Bold ideas and visions

Individuals and organisations that create and share narratives of what could be.

Example: Science fiction popularised future technologies long before they were available, including: The lunar landing ('From The Earth To The Moon', Jules Verne, 1865), Credit cards ('Looking Backward', Edward Bellamy, 1888), solar power ('Ralph 124C 41+', Hugo Gernsback, 1911) wireless headphones ('Fahrenheit 451', Ray Bradbury, 1953) and the internet and virtual reality (Neuromancer', William Gibson, 1984). (Via BBC)

Known and shared processes

Shared understanding across industries around a staged research and development process and the underlying concepts.

Example: The Stage-Gate process in manufacturing and other industries.

Primary research institutions

Organisations with the people, time, funding and capability to create and publish insight into problems and potential solutions.

Early-stage innovation teams

Organisations with the people, time, funding and capability to experiment with early stage innovations (a high proportion of which will not work) and develop new models.

Example: Xerox PARC, the inventors (but not popularisers) of the mouse and graphical user interface.

Protocols for experimentation

Protocols that lay out safe and ethical processes for experimentation.

Example: The drug development process used to develop Covid-19 vaccines.

Mid-stage innovation teams

Organisations with the people, time, funding and capability to develop models emerging from early-stage innovation into functioning prototypes, which they evaluate over multiple rounds.

Example: SpaceX rocket testing.

Late-stage innovation teams

People and institutions with the time, funding and capability to operationalise innovations and disseminate them at scale.

Incubator and accelerator programs

Structured programs of technical and financial support to help groups of innovators advance their ideas.

Example: The Pollenizer technology incubator (for a long list of incubators and accelerators see here)

Specialist consultants and intermediaries

Specialists who can provide technical support at specific points in the innovation process.

Example: Expert support in fundraising, prototyping, working with a particular technology, or developing a business model.

Tax incentives

Financial incentives for organisations to invest in R&D activity.

Example: R&D tax credits.

Separation of innovation from delivery

Dedicated innovation teams that also don't have to deliver the core services of the organisation.

Example: Barnardos UK has separated its service innovation function from its service delivery function, setting up the innovation function as a foundation.

Challenge prizes

Prizes that incentivise focus on a particular problem or opportunity.

Example: DARPA prize for unmanned vehicle to cross a desert.

Genuine innovation funding

Funding for particular parts of the innovation process, which measures outcomes in terms of learning.

Example: NSW Government commercialisation programs such as the Medical Devices Fund (MDF).

Regulatory sandbox

Suspension or modification of regulations to encourage innovation.

Example: NSW government's creation of a regulatory sandbox for financial services, which enabled periods of experimentation prior to licencing.

Coordination

Patterns that get more from the sum of the parts, through coordination and collaboration

Social R&D

Field coordinators

Bodies that coordinate research activity across a particular field or toward a particular mission.

Example: Rural research and development boards in agriculture including the Grains Research and Development Corporation, and Australian Egg Corporation Limited.

Field catalysts

Organisations that adapt and change over time to build effective ecosystems.

Example: Gavi, the Vaccine Alliance.

Shared data

Shared data and collaboration around problems and opportunities.

Example: The CADRE project will establish a shared and distributed sensitive data access management platform for the social sciences and related disciplines.

Evolving industry standards

Standards that change with time and enable one organisation to use another's technology or know-how.

Example: Industry standards for computer interconnects, images or videos codecs.

Active networks

Active industry networks that lead to the exchange of knowledge, partnership and aligned independent action.

Example: Future of Fish network.

Brokerage

Active connection of people and organisations that stand to mutually benefit from meeting each other.

Example: Proposed NSW R&D matchmaking platform.

Future conversations

Active conversations about the future of the industry imagining preferred futures.

Supply chain innovation support

The active nurturing of innovation along the supply chain of large organisations.

Example: How car manufacturers fund and provide technical support to their supplier to mutual benefit.

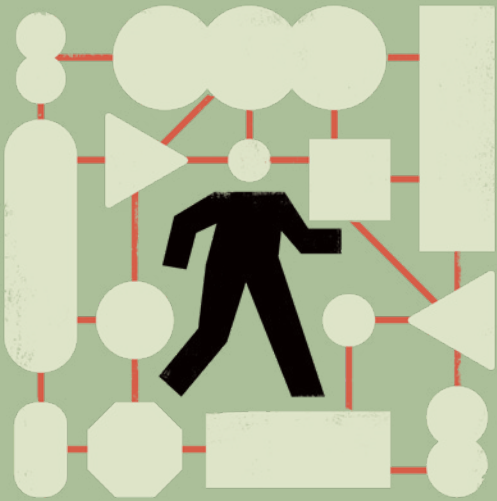
Government roadmaps for R&D support

Detailed plans on which R&D to support and how, with consideration of the levers available to government.

Example: NSW action plan for accelerating R&D.

Incentives

Patterns that give reason and reward for R&D



Social
R&D

Paying customers

A market who will pay for better innovations.

Example: The public are continually looking to upgrade their smartphones and tablets.

Public interest

A public keen to see the developments in a particular field.

Example: Public interest in advances in space travel, digital technology, and cars.

Public celebration and prizes

Celebration of major achievements and contributions to the field.

Example: The Nobel prize for science and technology.

Professional status

Organisational and industry-wide recognition for innovators.

Example: Industry awards and accolades. Remuneration linked to contribution.

Enticing work conditions

Work conditions that attract and retain the best and brightest, while fostering a culture of creativity.

Example: The moderate climate of Silicon Valley, and (historically) the flexible attitude to work hours and work attire.

Success metrics

Clear measures of success for innovations.

Example: Widgets sold, profit or efficacy.

Pro-R&D government procurement

Approaches to government procurement that favour R&D.

Example: The proposed NSW Small Business Innovation Research (SBIR) program, based on successful model used by the U.S. Government.

Intellectual property protections

Ways of protecting intellectual property that make it attractive to develop unique IP.