



# Lessons from University- Business Engagement in Australia: Making Collaboration More Effective



AIRG Roundtable

Sydney

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What do we  
mean by  
*More  
Effective?*

Delivers outcomes that -

- Create value for all parties
- At affordable cost
- Are of high quality
- And deliver stakeholder satisfaction

They must also be efficient -

- Timely
- With minimal transactions costs

Subject to regular performance review and improvement

## *On the policy agenda for over 20 years*



UNLOCKING THE “TREASURE  
TROVE” TO CREATE  
NATIONAL WEALTH



UNIVERSITIES WANT TO BE  
SEEN AS “USEFUL”



BUSINESSES WANT ACCESS  
TO R&D CAPABILITY, SKILLS,  
AND TALENT



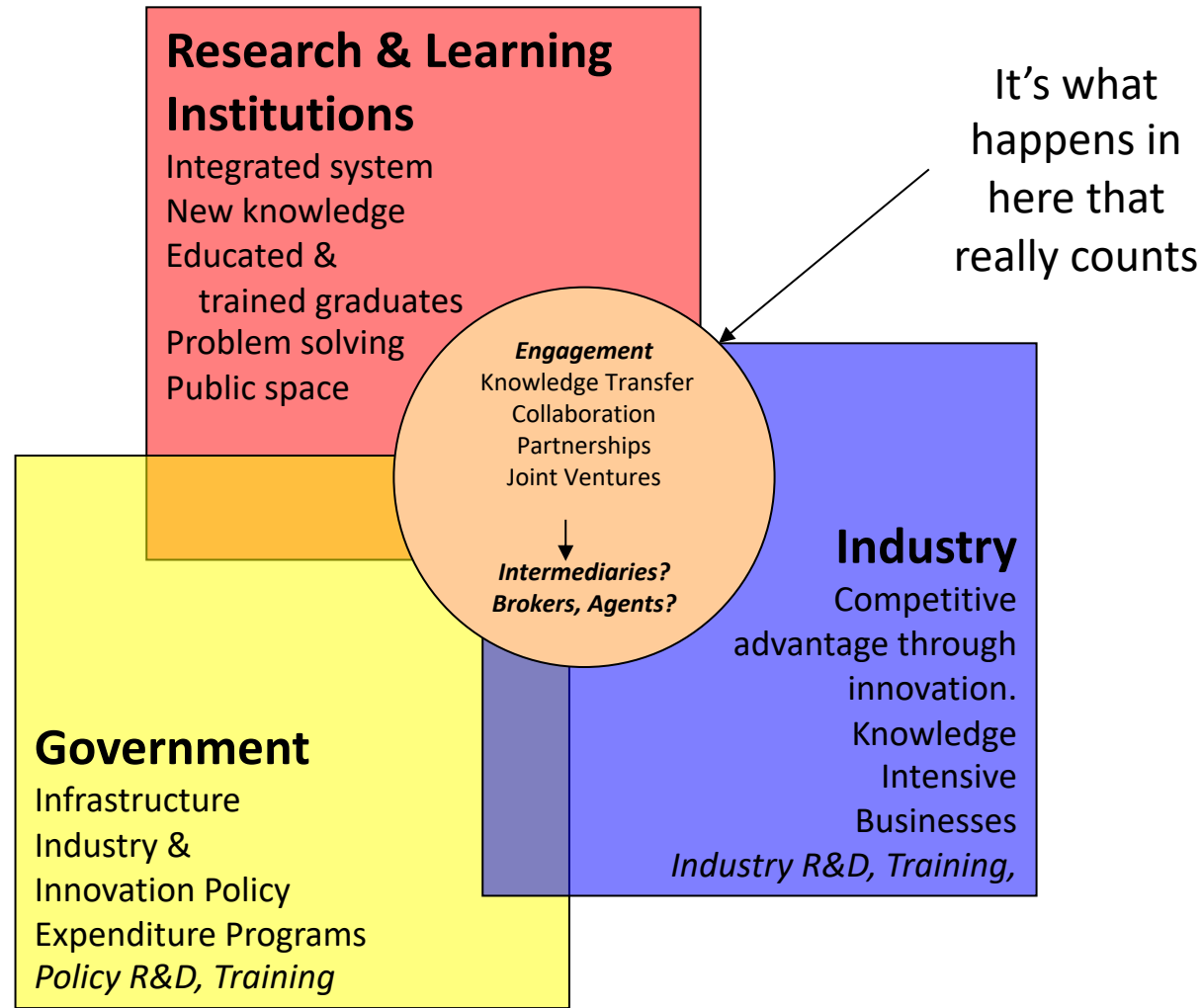
GOVERNMENTS WANT  
UNIVERSITIES TO  
CONTRIBUTE TO ECONOMIC  
GROWTH



THERE IS A “SOCIAL  
CONTRACT” BETWEEN  
SCIENCE AND SOCIETY

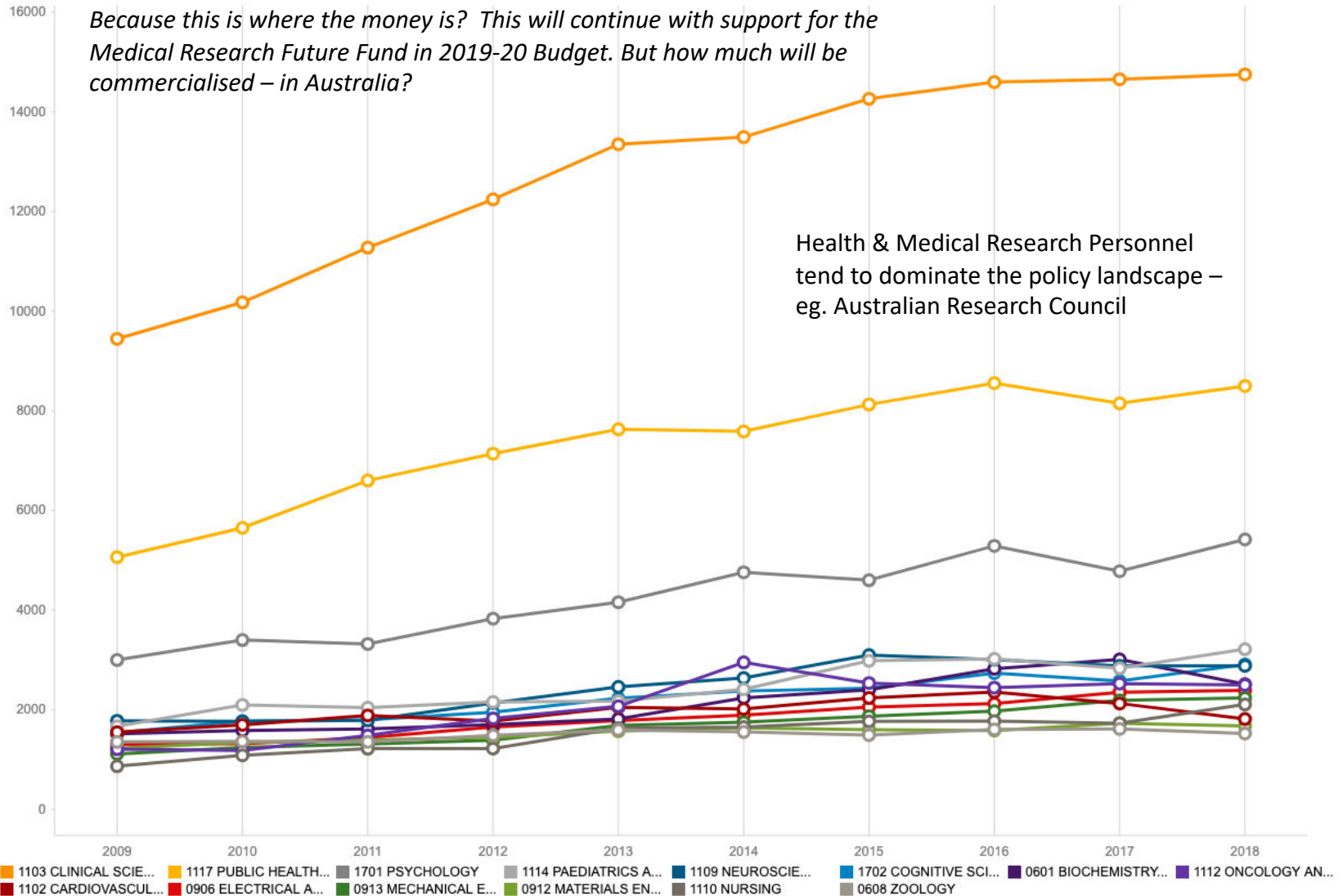
# The Ideal World of the Knowledge Economy

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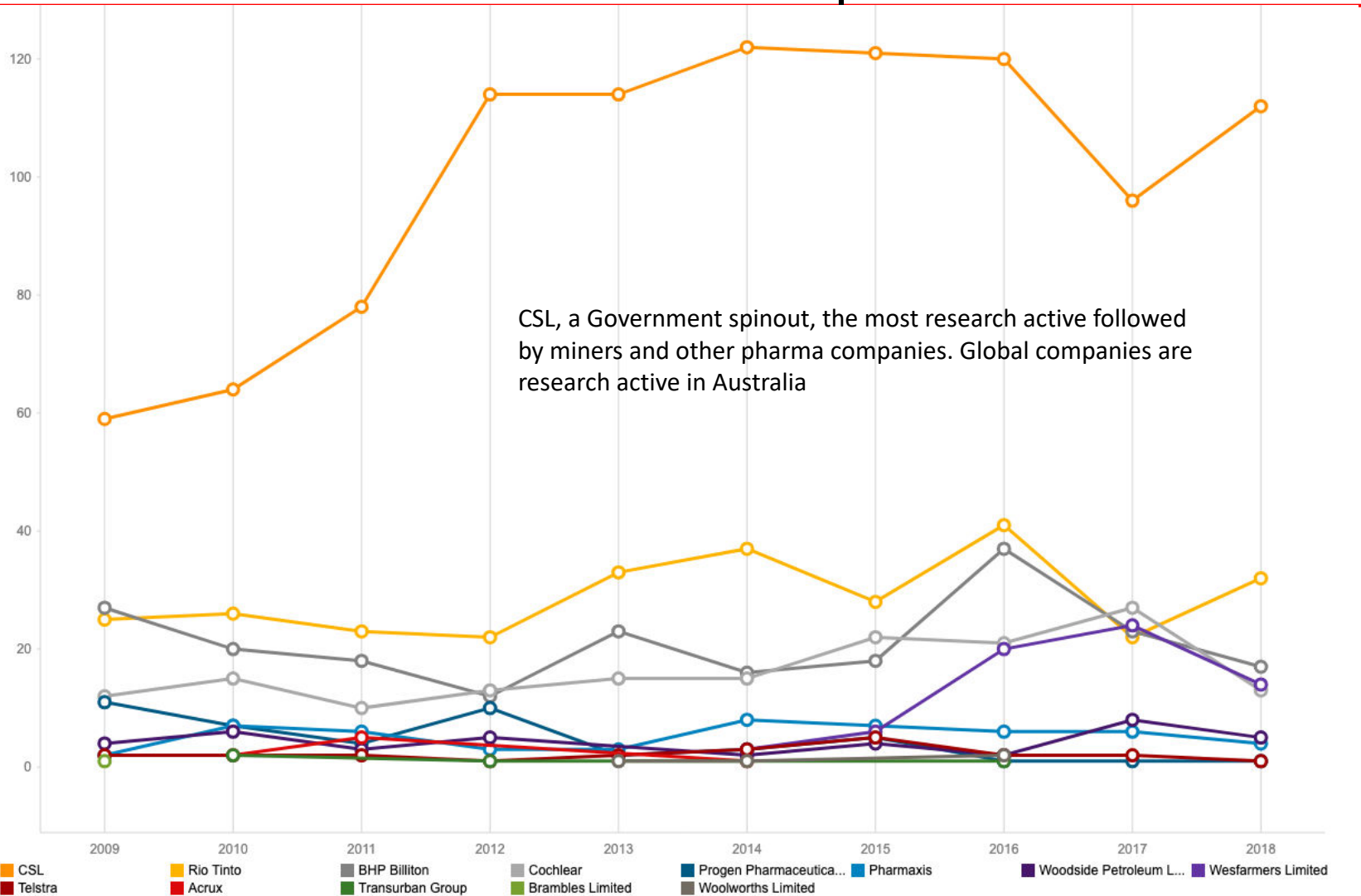


*Many have written about a “convergence” of interest and a “natural coalescence”*

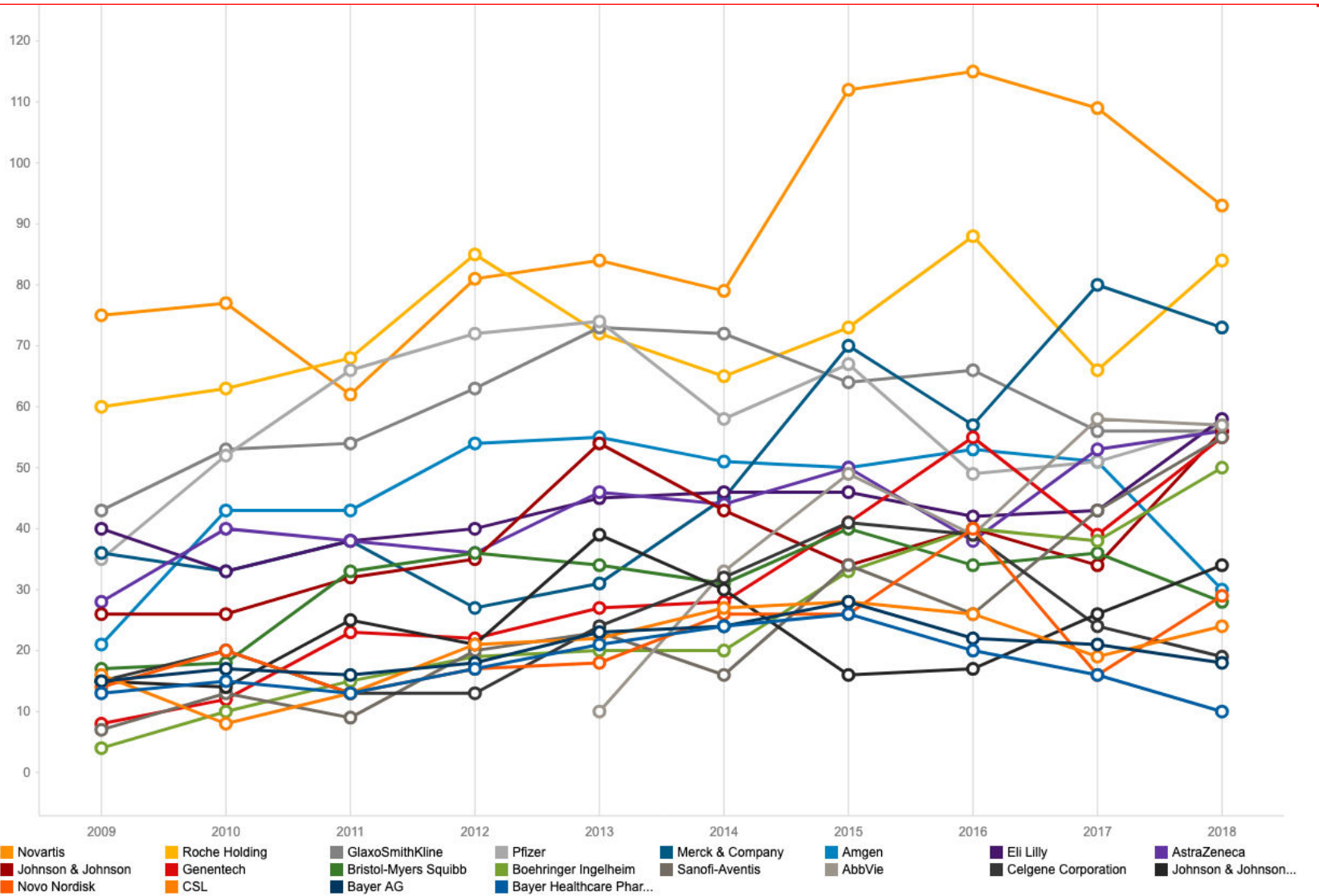
# Australia's research output is heavily concentrated in Medical Research & Psychology



# Even for Australia's corporate sector, in the most research active companies

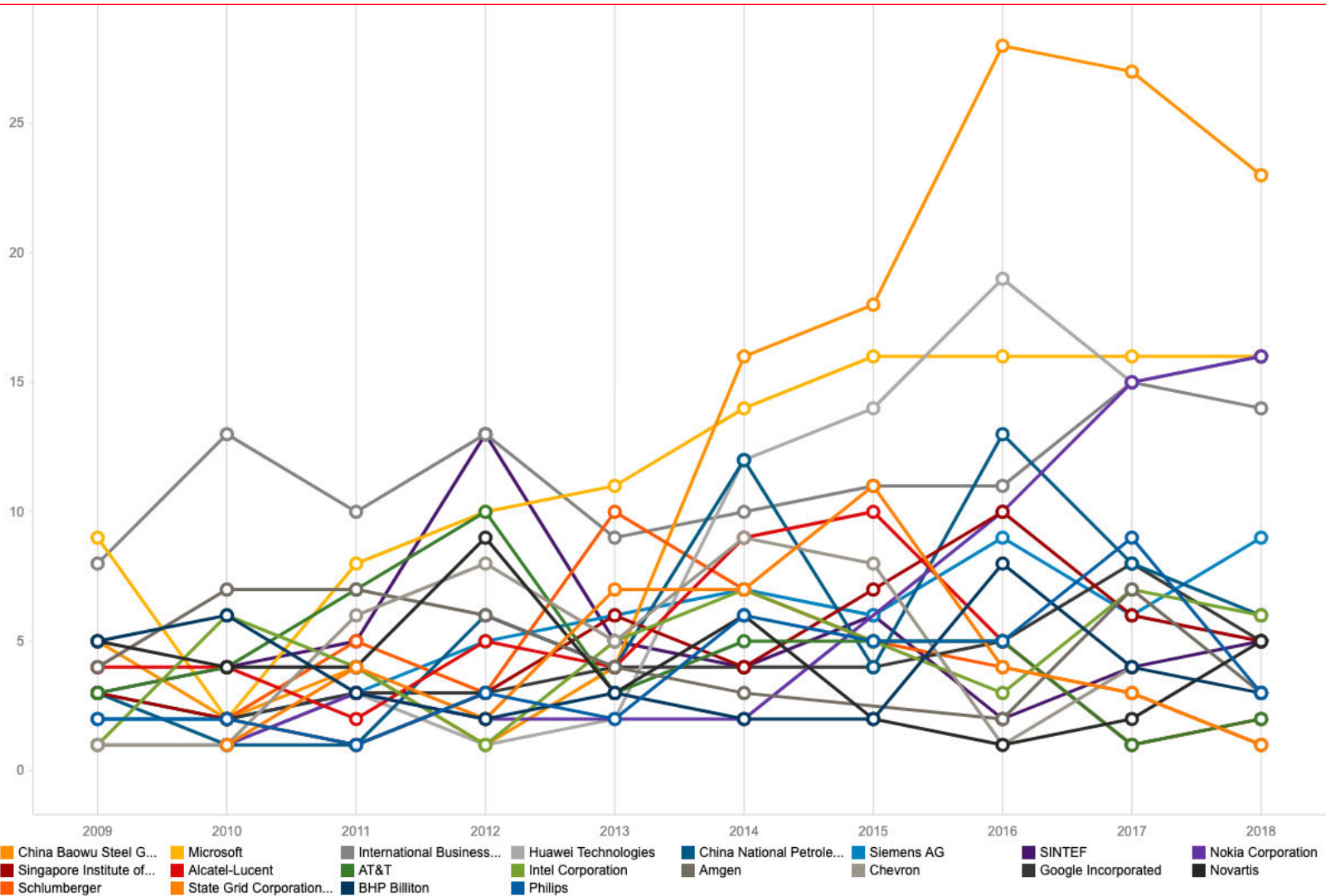


# Multinationals do collaborate in Health & Medical...



Indicators: Web of Science Documents. Organization Type: Corporate. Collaborations with Locations: Australia. Schema: Australia For Level 1. Research Area: 11 Medical And Health Sciences. Time Period: 2009-2018.  
 InCites dataset updated Mar 29, 2019. Includes Web of Science content indexed through Mar 1, 2019. Export Date: Apr 7, 2019.

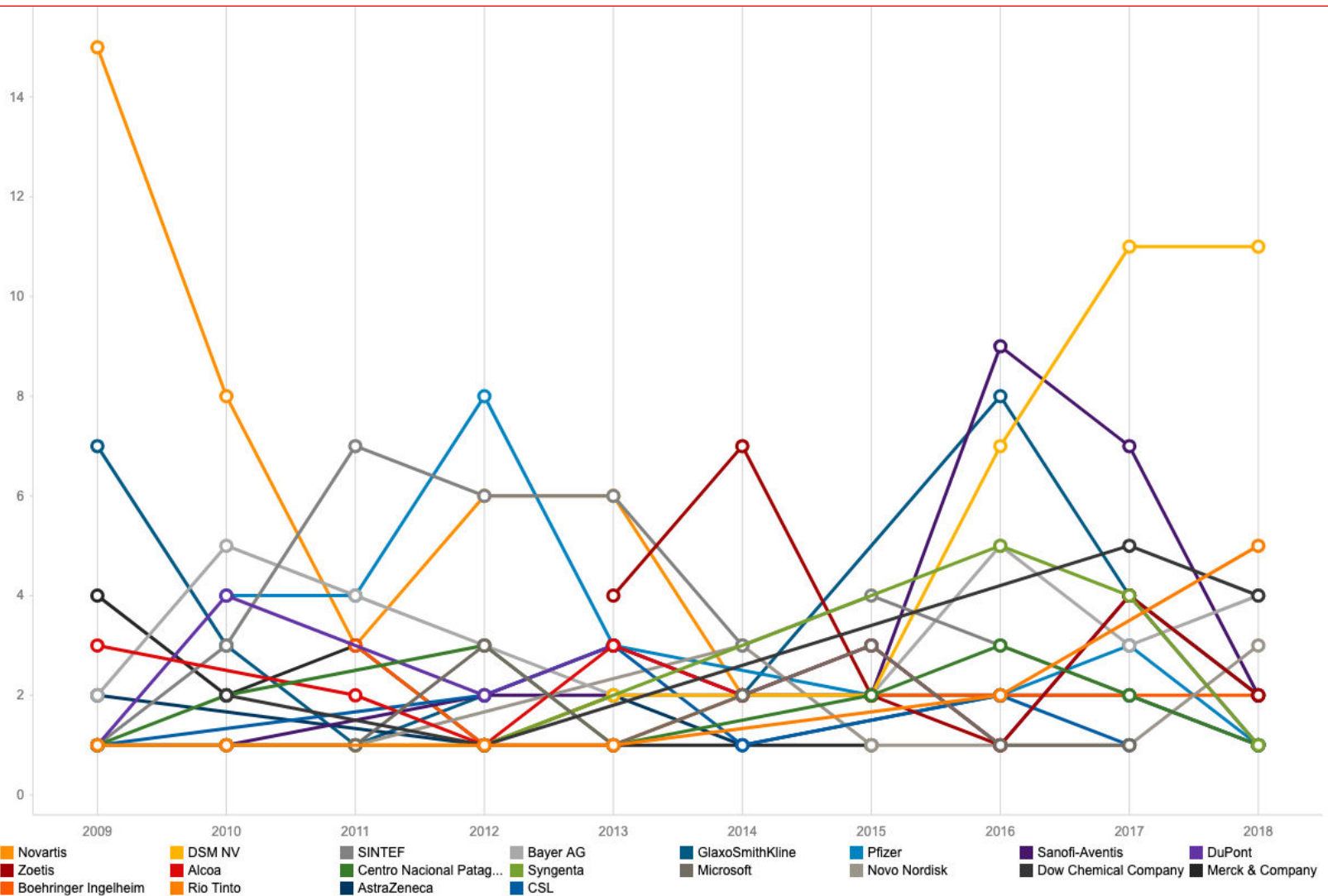
# ... but not so much in Engineering, Technology, Maths



Indicators: Web of Science Documents. Organization Type: Corporate. Collaborations with Locations: Australia. Schema: Australia For Level 1. Research Area: 01 Mathematical Sciences, 08 Information And Computing Sciences, 09 Engineering, 10 Technology. Time Period: 2009-2018. InCites dataset updated Mar 29, 2019. Includes Web of Science content indexed through Mar 1, 2019. Export Date: Apr 7, 2019.



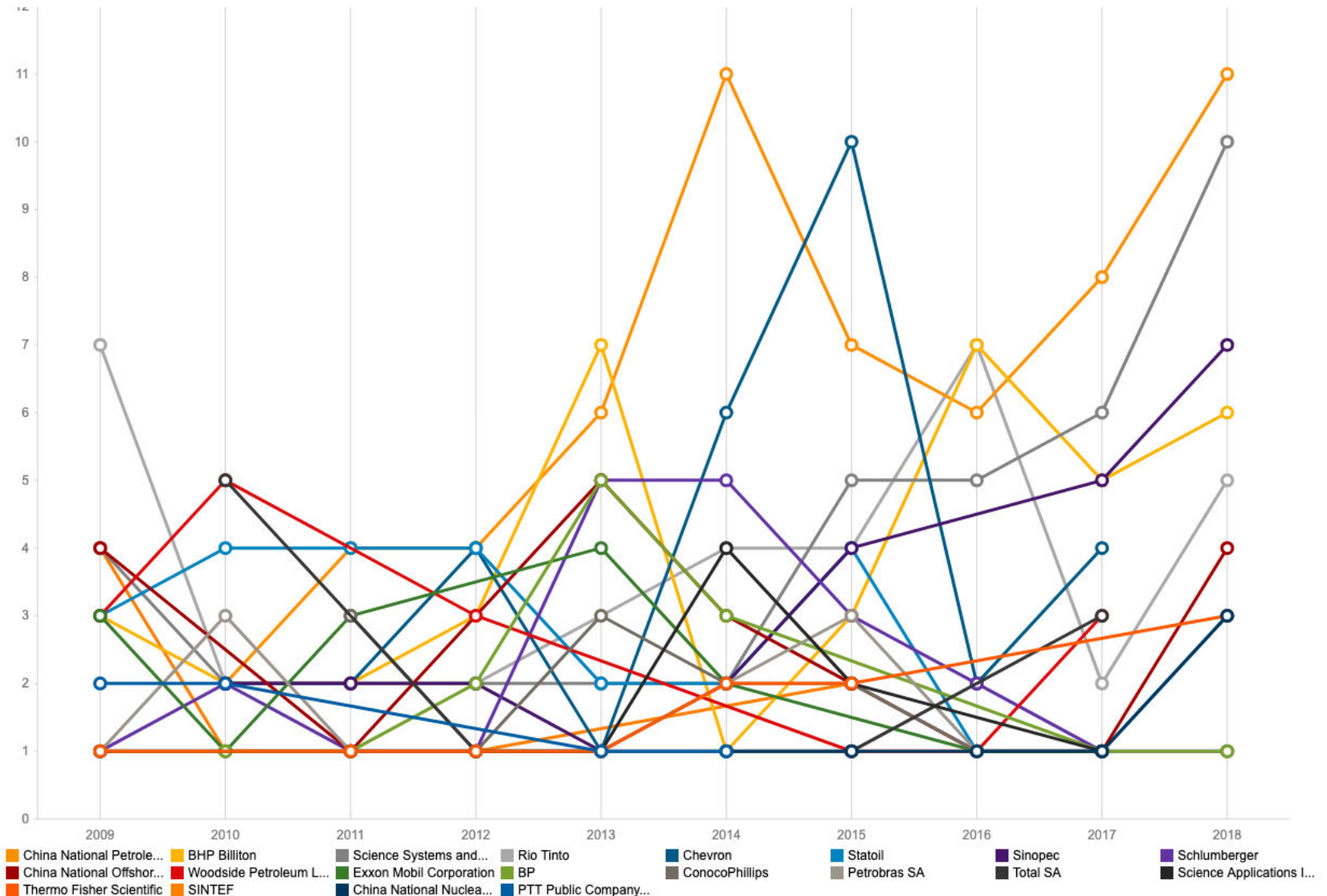
# ... and even less in Agriculture & Environment



Indicators: Web of Science Documents. Organization Type: Corporate. Collaborations with Locations: Australia. Schema: Australia For Level 1. Research Area: 05 Environmental Sciences, 07 Agriculture And Veterinary Sciences. Time Period: 2009-2018.

InCites dataset updated Mar 29, 2019. Includes Web of Science content indexed through Mar 1, 2019. Export Date: Apr 7, 2019.

# ... and Mining, including China



# Roles and responsibilities in the Knowledge Economy

## Universities

Increases stock of useful knowledge  
— Publications, patents, prototypes

### Educate people

— Undergraduates, graduates and post docs  
— Builds local talent pool.

### Solve problems:

— Contract research  
— Cooperative research with industry  
— Technology licensing  
— Access to instrumentation & equipment  
— Incubation survives  
— Nurtures spin out and start up companies

### Provide “public space”:

— Access to networks and social interaction  
— Meetings, conferences, events  
— Alumni networks  
— Internships, faculty exchanges

### Establish Brand

— Attracts visitors  
— Builds reputation  
— Creates distinctiveness

### A significant industry in its own right

*Institutions are significant businesses and have major economic impacts*

### The business model is changing

## Industry

**Industry** drives the economic development process through **production, distribution and sale of goods and services**

*An industry consists of businesses - large and small – to sell products and services to customers*

### Businesses create jobs (not governments)

Businesses invest in capacity and capability to create and maintain customers (and make ROI)

### Businesses require

— Infrastructure to grow and prosper—  
Transport, energy, communications  
broadband, water, electricity gas, housing for employees  
— Access to talent

### Businesses ‘cluster’ around:

— A lead business, (e.g. government agency)  
— Regional talent pools  
— Research institutions (e.g. silicon valley)  
— Cultural and collection institution  
— A public facility (e.g. a hospital)  
— A critical infrastructure asset (e.g. airport, rail head, convention centre)

## Government

**Sets goals** for economic growth, employment, lifestyle

### Implements macro economic policies

- Fiscal  
- Monetary  
- Exchange rate

### Addresses market failures

— Public goods  
— Externalities: infrastructure investment, education & training, etc

### Develops/implements Industry policies

— To grow and sustain target industries  
— To create jobs

### Develops Innovation policies to help build competitive advantage

— New business support  
— R&D strategies

### Makes Strategic Investments

— To deliver economic and social benefits  
— Merit criteria

### Helps build competitive advantage:

— not all industries or businesses can be successful  
— no problem “picking winners; just don’t pick too many losers”

**Basis for engagement: synergies, mutual benefit, shared interest in outcomes**  
**BUT HOW DOES IT ALL COME TOGETHER?**

**NOT EASILY FUNDAMENTALLY DIFFERENT INSTITUTIONAL MISSIONS**

# The Reality: Fundamentally Separate Institutional Pillars

## Innovative Businesses

**Mission:** To create and retain customers.

**How:** Delivering goods and services that satisfy wants in a better way than competitors

**Orientation:** Output, results

**Accountability:** Boards, Shareholders, Analysts

**KPIs:** Sales, market share, share price

**Critical Success Factors (CSFs):** Brand, reputation, loyalty, trust

**Viability test:** P&L, BS, CF benchmarks, TBL & SLO (legitimacy)

**Appetite for Risk:** High  
(i.e. the nature of entrepreneurship)

## Universities

**Mission:** Creating, expanding, and disseminating knowledge

**How:** Education, research, business/ community engagement

**Orientation:** Autonomy, process, procedure

**Accountability:** Independent Governing Councils (University Statutes have force of law)

**KPIs:** EFSL, Research income, global rankings

**CSFs:** Eminence, int. reputation, student experience

**Viability test:** P&L, BS, CF benchmarks. Community confidence.

**Appetite for Risk:** Very Low

## Government

**Mission:** Economic growth, employment, price stability

**How:** Efficient and effective policies and programs

**Orientation:** Rules, regulations, compliance (bureaucracy)

**Accountability:** Legislature, Voters

**KPIs:** Voter sentiment, popularity

**CSFs:** Honesty, integrity

**Viability test:** Balanced budgets. Elections

**Appetite for Risk:** Moderate to low; scrutiny by large no. of "integrity" bodies, media

## Charities (NGOs)

**Mission:** To alleviate socio-economic disadvantage

**How:** Service to society. Distribution of G&S to people in need

**Orientation:** Not for profit. Volunteer engagement

**Accountability:** Members, Donors, Government

**KPIs:** Assistance and support provided

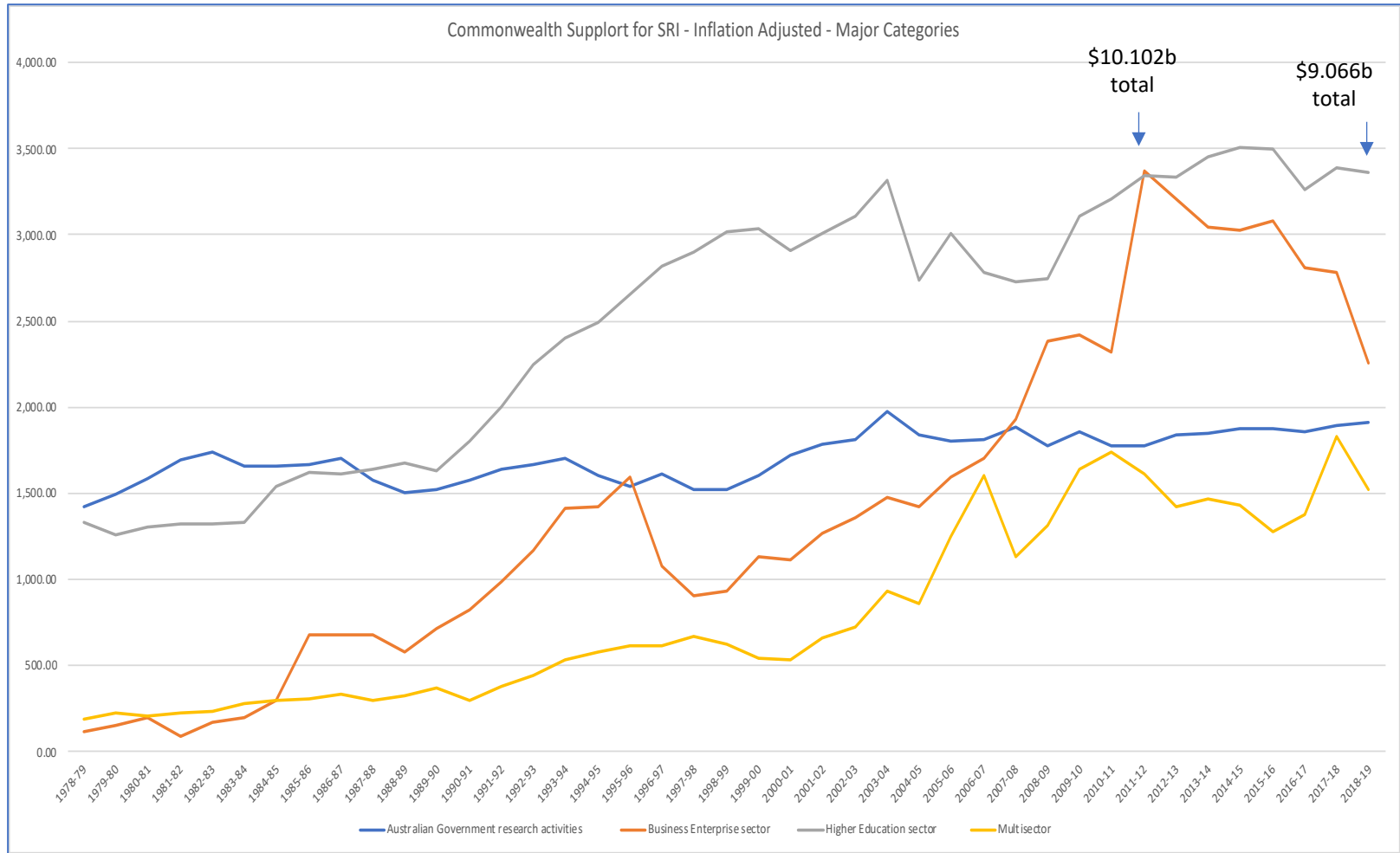
**CSFs:** Compassion, empathy

**Viability test:** Continuity

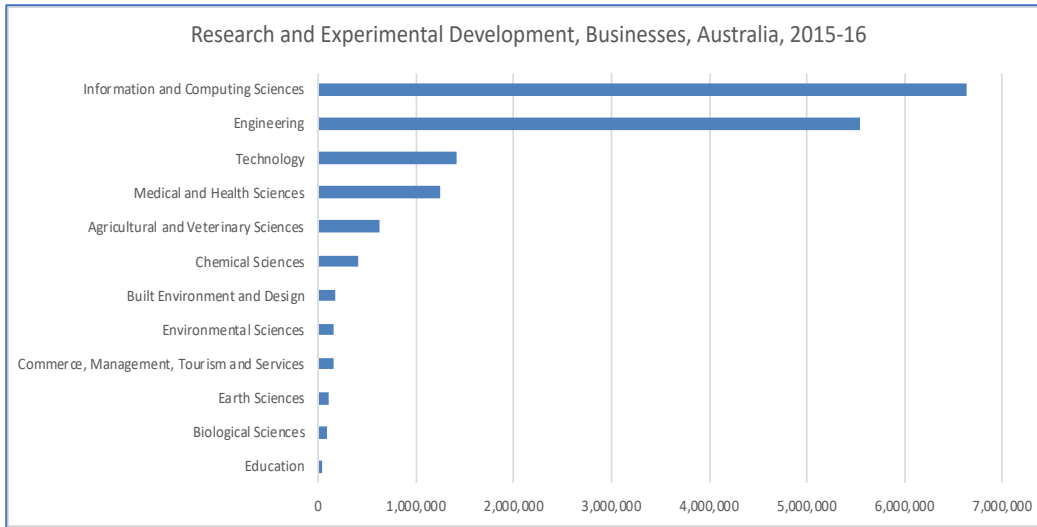
**Appetite for Risk:** Low

Note: Australian universities do not operate as NGOs/ Charities

# Commonwealth Support for R&D peaked in 2011-12



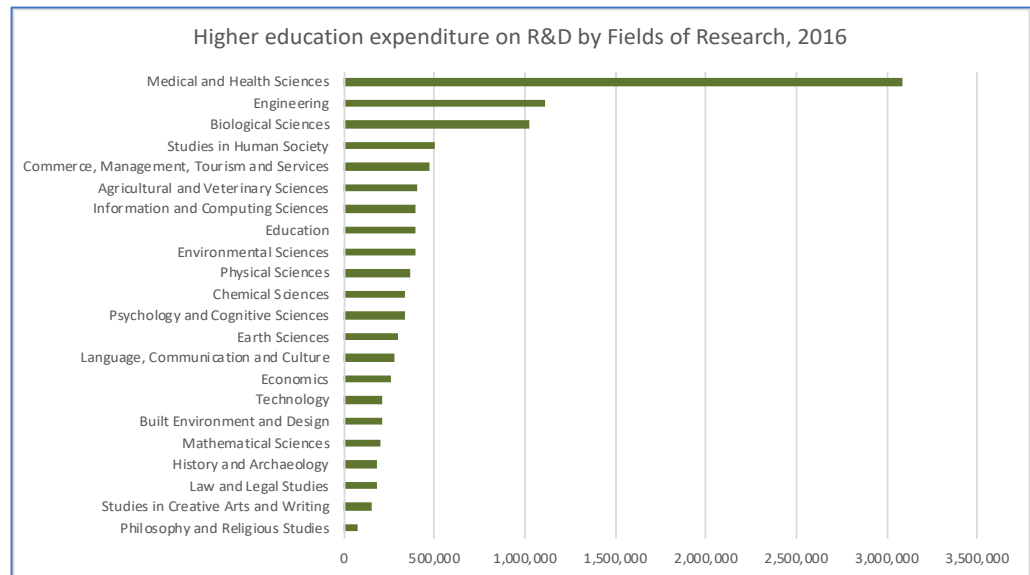
# A Mismatch of Research Interests?



Current **business** focus on ICT research, Engineering, Technology, Health and Medical Services

*Good collaboration examples in Engineering*

Current **university** focus on Medical and Health, Engineering, Biological sciences



Source: ABS

# What business people have been saying about Universities

- Don't know how to commercialise research
  - TTOs “hopeless”
  - Academics unrealistic in commercial negotiations
- Incentives skewed
  - Academics mainly interested in scholarly publication
  - Focus is on generating short-term research income – not results or value
  - Students are the priority (academics *never* late with subject results!)
- Many businesses and research investors want “research partnerships” (agreements)
  - But a predominant university (and government) culture is “research provider” (procurement model) – ‘creation-transfer-adoption’ paradigm
- Complexity in dealing with Research Offices and generating commitment
  - Excessive contribution to overheads
  - Complex contracts
  - Difficult IP policies and practices
- Restrictive outside work policies (only a few retain the “one day a week” provision)
- Universities will not share risk or cost
- Too many universities – lack of scale, difficult to comprehend, compete rather than collaborate
- Universities should commit to industry and community projects as return for generous government funding (the “social contract” between science and society)

*Some of these views can be countered and there are examples of exceptionally good practice*

# What universities say about business

- Business cannot be trusted (profit motive)
- Businesses will compromise academic independence (e.g. pharmaceutical companies, current sugar controversy, Ramsay Centre)
- Businesses do not understand -
  - The existence of research strategies and long term research priorities
  - Importance of discovery, investigator driven research – business will not invest in basic research (*but global companies do – in a big way*)
  - Staff often have contractual commitments to ongoing research projects that cannot be postponed (e.g. ARC Agreements)
  - Need to “backfill” teaching commitments – appointing casuals - small, one off projects (e.g. \$5-20k) are not worthwhile
  - The full cost of research
  - Universities are run like businesses – to P&Ls, Balance Sheets, Credit Agency Ratings
- Businesses take a “K-Mart” approach to acquiring knowledge
  - Universities as knowledge vendors, “knowledge as a commodity”
- Businesses will not go through formal channels
  - i.e. the RO or TTO
  - Prefer to deal directly with academic staff – exposes universities to risks

*There are excellent examples of successful, long term, business-university collaboration – particularly through research centres, institutes – e.g. SMaRT@UNSW*



# What universities and business say about Government

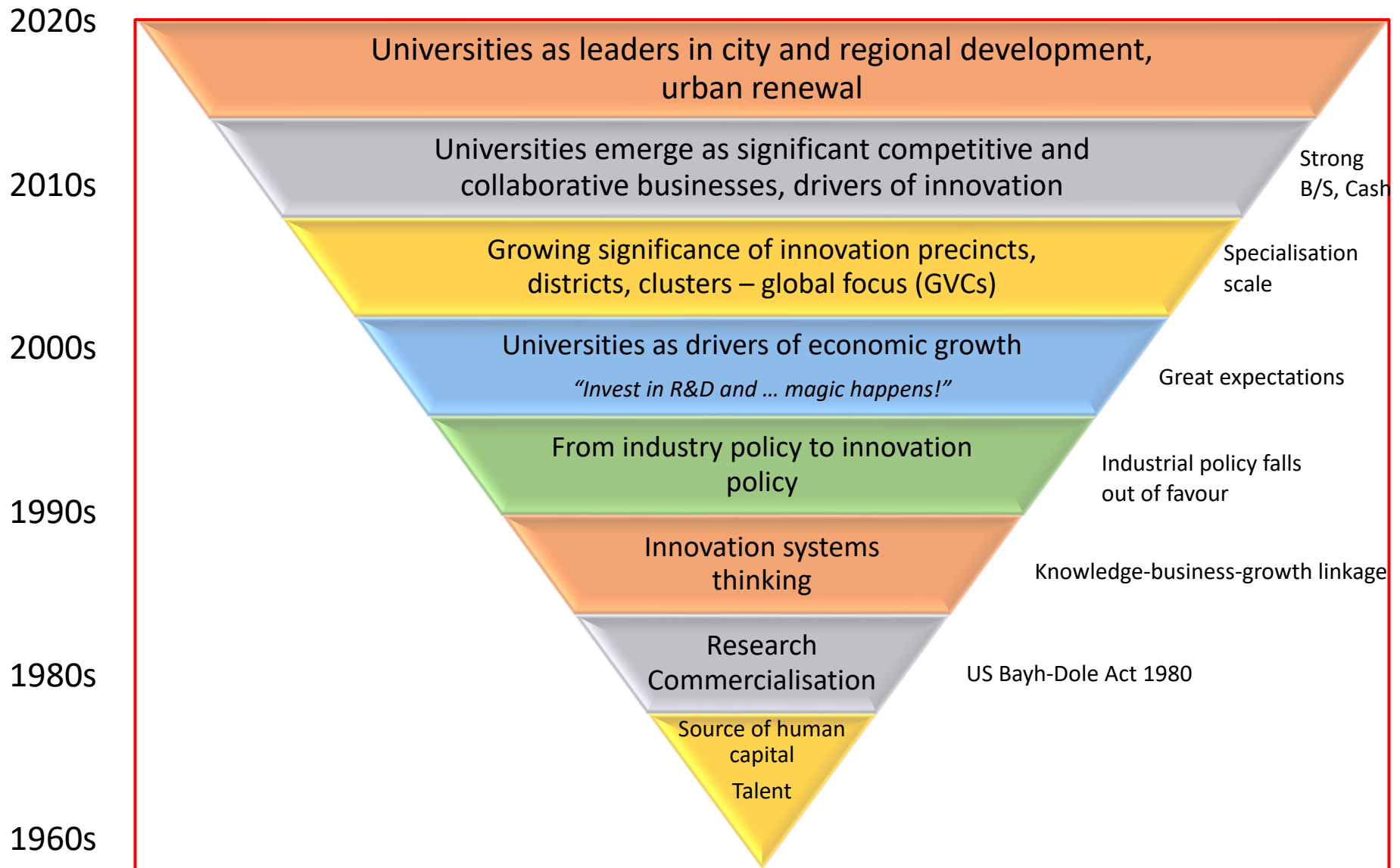
- Government has **lost interest** in national research and innovation policy –
  - Overall **decline in public funding** for research
  - Innovation has “lost its lustre” – associated with job losses (**AI badly handled**)
  - Shift from “Innovation/S&T policy” to broader “industrial strategy”
    - *A short term commitment to industry sectors (growth centres), clusters, precincts – but investment is tiny*
- *But – an overwhelming, longstanding and growing commitment to **health and medical research***
- **Obsession with startups** and the promise of rapid wealth creation
- **Politicization** - shift of grant programs to departments away from independent bodies
- **Short term, multiple programs, and small funding commitments** – 3 year max, multiple agencies, subject to discretionary cuts (created an industry of grant writers)
- Many grant programs **too restrictive** - e.g. ARC Linkage
- **CRC program too complex and costly** to access.
  - But CRC-P program strongly supported
- State government grants too small to have impact and drive change
- Government has a “**funding**” rather than “**investment**” mindset, announceables
- **Does not have a long-term vision for science, research and innovation** – notwithstanding NISA and the *Australia 2030* project
- **Commonwealth Government has lost the initiative** – Universities, ROs and States/Territories taking higher profile in Innovation and Industry Strategy (e.g Rural Innovation and Industry Strategy)

# What Governments say about universities

## Rightly or wrongly -

- Not focused sufficiently on national agendas - independent and autonomous Governance
  - But composition of University Councils and university structures are changing
- Argument that “we need more money for research” is running thin; lacks a “value proposition”
- Have not embraced micro-economic reform, the inevitable (and global) disruption in the “higher education industry”
- Do not commit strongly enough to philanthropic sources – mostly, approaches lack sophistication
- Can do more to engage with industry and business
- Are well resourced from boom in overseas students and windfall from demand driven funding; have substantial property assets available for development
  - *This does not apply to all universities*
- *Potentially*, universities can be **partners** in regional and national industry and economic development strategies
  - *The focus of the national lobbying effort needs to change*
  - *Leverage the very strong international connections*
- This is tending to occur at *State/Territory* level, with good results
  - *Led by Victoria, Queensland and now ACT, Tasmania, NSW, SA*
  - *City deals have been important in this*
- Specific purpose, short term, competitive, small funding pools have been a very blunt instrument, and largely ineffective
  - NCRIS and EIF major exceptions – and exemplars

# Growing Imperatives for More Effective Collaboration



Question ...

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“Why don’t we get more effective engagement?”

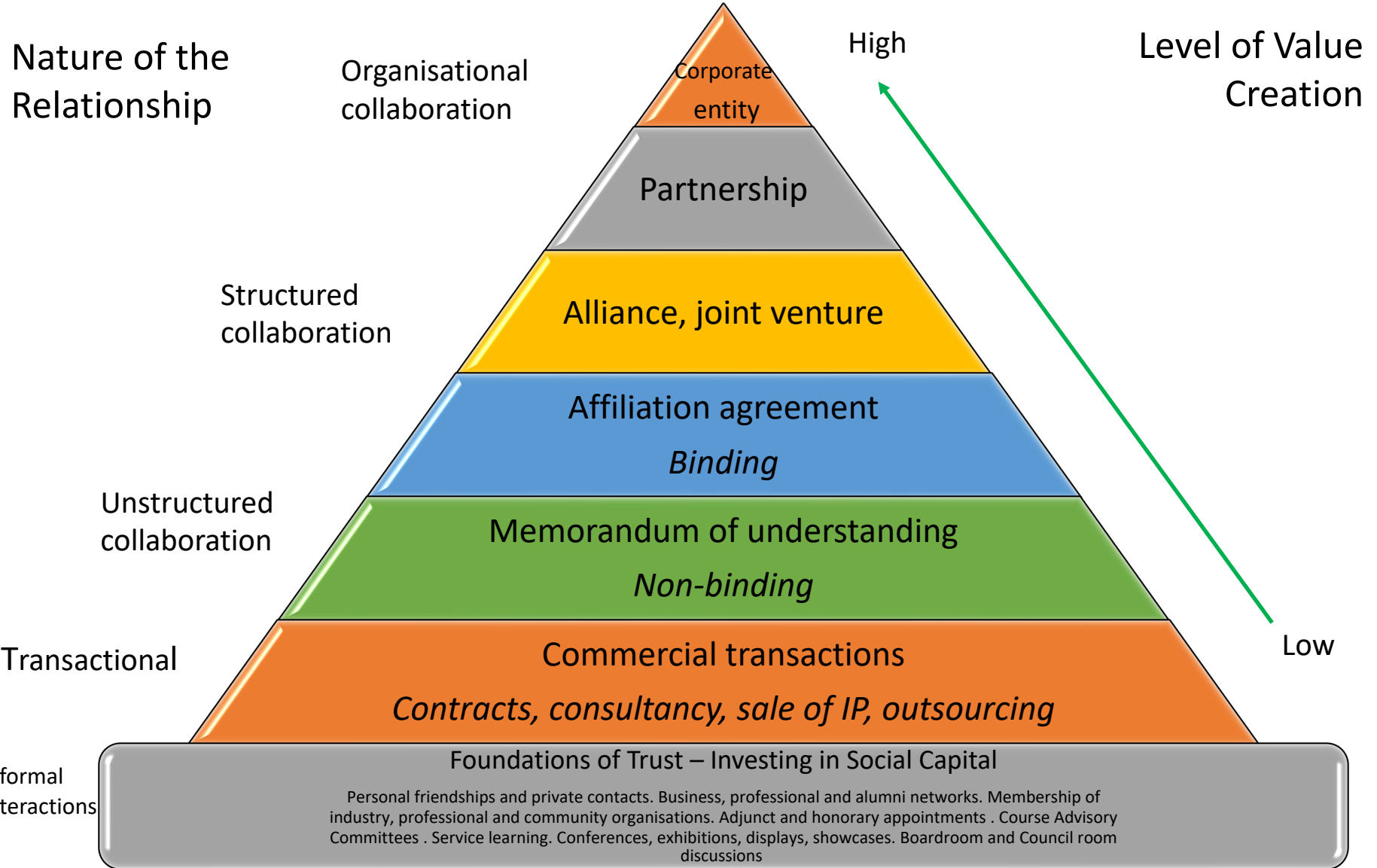
Short answer -

*“People do business with people they trust”*

This requires Investing in Social Capital

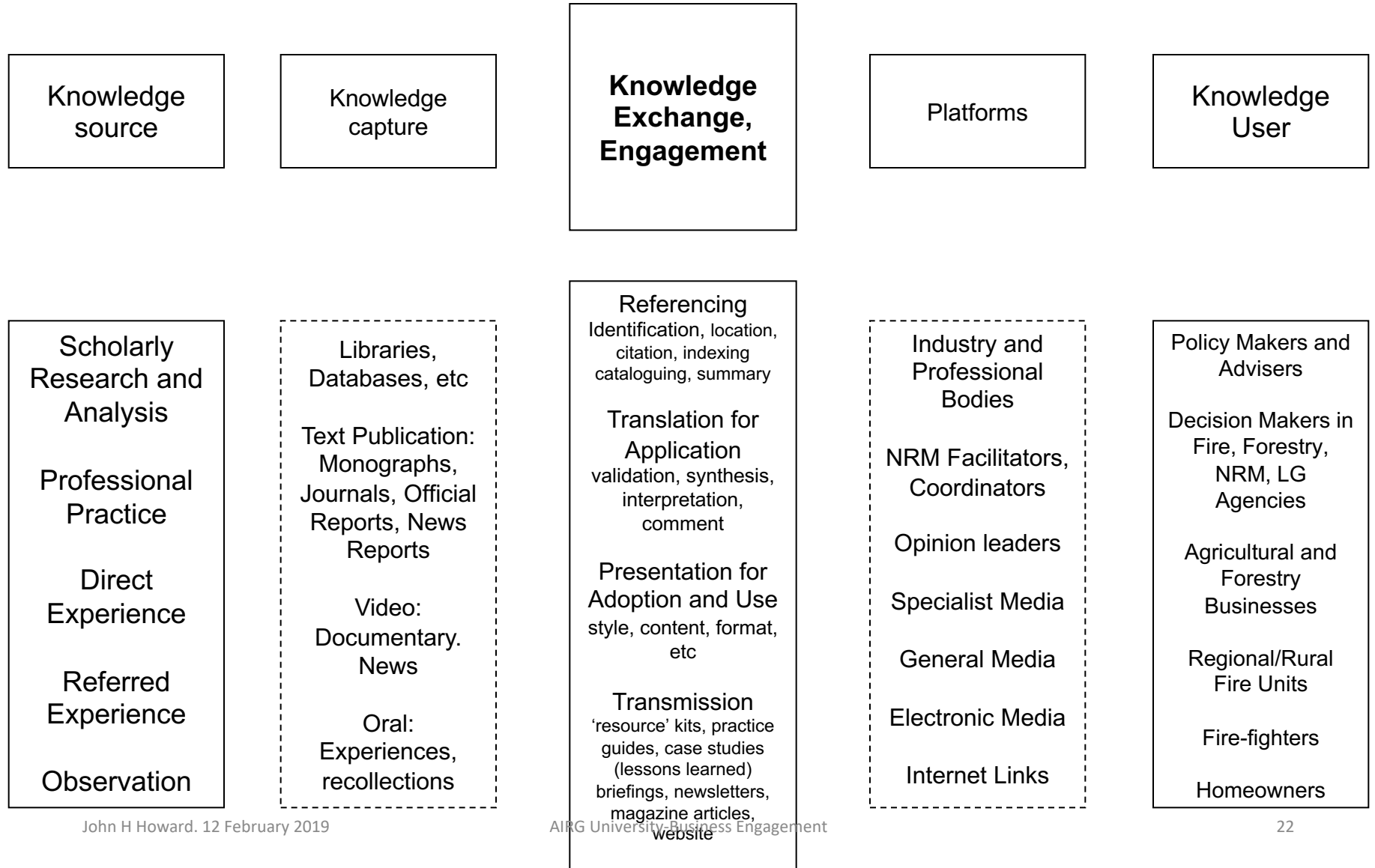
*The University sector is segmented – reflected in their research output  
This impacts on collaboration opportunities*

# How Businesses and Universities Collaborate



# Model for Knowledge Engagement (For Fire CRC)

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# How to get more effective engagement

- Build foundation for trust and *ongoing* relationships
  - Who should they be? University Staff? Consultants? Businesses?
  - What is the role of intermediaries, brokers, consultants?
- Establish principles for effective transactional relationships –
  - Codes of conduct
  - Best Practice
- Develop protocols for meaningful memoranda of understanding
- Enter into Affiliation Agreements that are meaningful and flexible
- Establish principles and protocols for alliances and joint ventures in teaching and research – e.g.
  - research institutes and centres
- Establish principles and protocols for long term research partnerships
  - Multi party
- Develop contemporary guidelines for university involvement in corporate vehicles to undertake and commercialise research, teaching, outreach
  - Address controlling and non-controlling equity in companies
- Broader adoption of the CRC model (outside the CRC Program) – e.g Northern Australia CRC
- Professional development strategies for Chairs/CEOs/Research Directors Research Centres, Institutes
- Think about new/evolving university models
  - All (39) Australian public universities look alike (unified national system) – suboptimal
    - But they do differ – UNSW, Macquarie, (Engineering), Usyd, Newcastle (Clinical, Oncology)
  - Encourage development of more diverse system – as in Europe and particularly Germany – eg.
    - Research intensive universities – Go8 and IRU well positioned
    - Technology Stream - ATNs + Swinburne going down this track
    - TAFE already positioned as “industry facing” – offering Assoc. Degrees
    - Rural and Regional Universities – special focus on agriculture and regional development
- Integrate Universities and TAFE/VET into State “Tertiary Education Systems” (as in the US)

# University—Business, Government, Community interactions: a typology of relationships

Form of Relationship	Transactional	Collaboration, Cooperation	Organisational/Managed
<b>Features</b>	Exchange relationship	Mutual, reciprocal relationship	Formal, Strategic relationship
<b>Examples</b>	IP Licensing, sale and assignment	Cooperative research Centres (CTRs)	Joint Venture Agreements – Covered by executable deed, such as a research agreement
	Contracts for the purchase of knowledge services	Formally constituted Centres for teaching and research	Property development: science and technology parks, commercial leasing, innovation centres
	Competitive funding schemes	Business ventures – including start-up companies established for commercialisation of IP	Partnership agreements Incorporated entities
	Student recruitment		
	Sponsorships, donations, gifts, sale of naming rights		
<b>Orientation</b>	Sales and marketing	Engagement, commitment	Integration, unified, obligation, ROI
<b>Outcome</b>	Creates a sale, a deal	Builds understanding, trust	Creates strategies
<b>Time Horizon</b>	Immediate	Medium term– 1 – 3 years	Long term 3-10 years
<b>Level of relationship</b>	Middle level/operational managers, TTO staff, research active staff	Senior managers, Deans and PVCs	CEOs, Vice-Chancellors, DVCs



# Towards engagement

