Analytical Services

Adelaide University

Strengthening South Australia's economy through strategic alignment between research and industry

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About

This report was commissioned and funded by Adelaide University through its Research and Innovation Portfolio. It originated from a request by DVCRI Anton Middelberg to identify innovative ways to formally connect research capability and capacity data with economic activity data, following discussions on assessing University research performance and impact held between Anton Middelberg and Nick Fowler, Elsevier's Chief Academic Officer.

The analysis has not relied on the provision of data from Adelaide University and therefore is limited to data available from sources outside the University, such as research publication data from Scopus and economic data from the Australian Bureau of Statistics. A complete list of data sources used is provided in the Annex.

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Acknowledgement of country

Elsevier

Elsevier would like to acknowledge the Traditional Custodians of the lands and waters on which we live and work. We acknowledge that Aboriginal and Torres Strait Islander peoples have continuously passed on knowledge for millennia, using resources from the land and waters to nurture and promote healthy communities, and we pay our respects to Elders past and present.

Adelaide University

Adelaide University is committed to reconciliation, and we respectfully acknowledge the Kaurna, Boandik and Barngarla First Nations Peoples and their Elders past and present, who are the First Nations' Traditional Owners of the lands that are now home to our campuses across South Australia. We also acknowledge the other First Nations lands across Australia on and with which we conduct business, their Elders, ancestors, cultures and heritage.

Ours is the first Australian University to have provision for an Aboriginal name in its founding legislation and we are working with Elders and Community to advance a fitting descriptor in language for our role and mission.

Executive summary

South Australia (SA) is undergoing an economic transformation, driven by a shift towards knowledge-based and sustainable growth. The new Adelaide University is positioned as an engine for innovation and capability building in this transformation.

Adelaide University commissioned this report to assess where its research specialisation intersects with the state's economic specialisation, identifying critical alignments and untapped potential.

SA economic transformation and Adelaide University merger

The Adelaide University merger marks a pivotal moment in SA's knowledge economy transformation, with research-industry alignment critical to unlocking innovation, productivity, and sustainable growth.

South Australia (SA) is undergoing a bold, government-driven transformation to secure its economic future, centred on a vision of a knowledge-driven and sustainable growth. At the heart of this reform agenda is the landmark merger of the University of Adelaide and the University of South Australia, creating the new Adelaide University. It will be one of Australia's largest universities, poised to contribute approximately $4.7 billion annually to the national economy with research expenditure of $500 million per annum.

To inform Adelaide University's positioning as a key engine for innovation, productivity, and growth in SA, this report was developed through a collaboration between Elsevier and Adelaide University. The analysis explores the alignment between the combined university's initial research specialisation trajectory and the state's current economic specialisation patterns.

This report is structured around Adelaide University's five Signature Research Themes. Each theme integrates insights from the detailed industry analysis, highlighting industry subdivisions that offer the greatest strategic opportunities for research-driven economic growth.

Key findings

Agriculture, Food & Wine

SA exhibits strong structural and institutional advantages in Agriculture, Food & Wine — supported by a globally competitive agri-food ecosystem and strong research capabilities.

University-industry alignments exist in Agriculture and Wine Manufacturing activities

- **Agriculture:** South Australia's economic specialisation in this primary industry aligns with Adelaide University's research focus, supported by major translational programs in crop genomics, viticulture, and livestock systems at the Waite and Roseworthy campuses.
- **Beverage Product Manufacturing** is South Australia's most specialised industry subdivision and benefits from deep research engagement. Adelaide University is strongly specialised in this area, collaborating with international producers, the Australian Wine Research Institute and regional SMEs.

Several agri-food sectors present both the university and SA with strategic opportunities for economic complexification

- **Aquaculture** and **Fishing** are dynamic growth subindustries in SA, nationally recognised for high-value, export-oriented seafood. However, aquaculture R&D is mainly led by state government agencies, with limited involvement from Adelaide University — presenting a strategic opportunity for greater university engagement.
- **Agriculture, Forestry and Fishing Support Services** is a rapidly evolving, highly specialised sector in SA with growing innovation in technical services (e.g., precision agronomy, drone spraying, and agri-data analytics), but Adelaide University's research focus here is only moderate. Expanding applied and service-oriented research in this area offers strong potential for economic growth and diversification.
- **Food Product Manufacturing** is economically specialised in SA, but Adelaide University's research focus is below the national level. Bridging this gap offers a strategic opportunity to add value to agricultural production and strengthen regional food manufacturing and export competitiveness.

Additional opportunities exist in agri-food value-add activities, such as Wood Product Manufacturing

Several adjacent sectors provide critical inputs and services that enhance productivity, innovation, and value addition across South Australia's agri-food system.

- **Wood Product and Pulp/Paper Manufacturing**: These sectors show moderate economic presence in SA, with niche potential for value-added wood products, sustainable packaging, and circular bioeconomy innovations. Adelaide University's research focus is currently limited, suggesting an opportunity to build capacity in bio-based materials and environmental engineering in support of downstream agri-food applications.

Defence and National Security

South Australia is home to a growing and strategically significant Defence and National Security ecosystem centred on naval shipbuilding, advanced manufacturing, space systems, and cybersecurity.

Adelaide University has the potential to drive R&D in defence shipbuilding and related defence fields

- **Transport Equipment Manufacturing**: This sector is central to SA's shipbuilding renaissance, centred on Osborne. While the state's overall specialisation for this industry subdivision is lower than national, the industry class of Shipbuilding and Repair Services (as part of Transport Equipment Manufacturing) shows above-average economic specialisation. Adelaide University's engagement offers a strong foundation, but the data show no research specialisation in this industry subdivision and further prioritisation may be needed to close the alignment gap.

Telecommunications and Data Services are critical enablers of the defence industry

- **Telecommunications Services** and **Internet/Data Processing Services**: These globally tech-intensive sectors are not yet above national specialisation for the state but support critical infrastructure for defence communications and space connectivity. Adelaide University's research focus is currently limited, but there is a latent opportunity for university-led uplift in telecommunications and secure network systems.

Sustainable Green Transition

This theme is central to SA's climate resilience and net-zero ambitions through interdisciplinary research spanning engineering, chemistry, agriculture, and social sciences.

University-industry alignments exist in Water and Waste Services, with the university driving innovation in water and waste solutions

- **Water Supply, Sewerage, and Drainage Services** are highly specialised in both SA's economy and Adelaide University's research, reflecting a shared focus on water security and innovation. The university's expertise and strong industry partnerships make this a model of effective university-state alignment.
- **Waste Collection, Treatment, and Disposal Services** are economically specialised in SA, with strengths in resource recovery and progressive policy. Adelaide University is nationally specialised in research, with successful industry collaborations and commercial ventures from university-led projects, positioning the sector for ongoing growth in advanced waste solutions.

Strategic opportunities exist to strengthen Adelaide University's role in SA's energy transition, particularly in Electricity and Gas

- **Electricity** and **Gas Supply** are central to SA's energy transition, with 70% of electricity generated from wind and solar by 2023 and a target of 100% net renewables by 2027, alongside pioneering hydrogen blending initiatives. Strengthening university engagement could unlock major opportunities, especially in advancing renewables and decarbonising gas networks.

Societal and Personal Health

This theme underpins SA's largest and fastest-growing sector, Health Care and Social Assistance, with several existing university-industry alignments.

Existing alignments in health and chemical manufacturing sectors underpin care, diagnostics, and biomanufacturing

- **Medical and Other Health Care Services** exemplify strong alignment between SA and Adelaide University, with both high economic and research specialisation. The university delivers globally significant research in public health, health psychology, clinical sciences, and diagnostics — directly supporting the sector's innovation needs.
- **Residential Care Services,** including aged care, nursing homes, and disability services, are highly specialised in SA and increasingly innovative. The integration of technology — such as assistive robotics and remote monitoring — with Adelaide University's focus on challenges in aged care supports applied innovation with significant social and economic benefits.
- **Basic Chemical and Chemical Product Manufacturing** is an emerging area of strength in SA, with growing investment and R&D in advanced chemical and pharmaceutical manufacturing. Both the state and Adelaide University show slight specialisation, presenting a strong opportunity to expand university-industry collaboration and boost SA's advanced manufacturing sector.

Opportunities exist to deepen Adelaide University's role in hospital-oriented innovation

- **Hospitals:** Despite being central to SA's health system and a key site of biomedical innovation, the Hospitals sector does not currently show above-national economic specialisation or university research intensity. Opportunities exist to further intensify involvement in hospital-based innovation, clinical trials, and digital health transformation.

Creative and Culture

This theme supports SA's identity as a cultural and artistic hub and plays a catalytic role in the state's transition towards a knowledge-based and inclusive economy.

Opportunities exist to strengthen Adelaide University's role in Creative and Digital Industries

- **Creative and Performing Arts Activities** are not highly specialised overall in SA, but there is notable specialisation in Performing Arts Venue Operation (part of Creative and Performing Arts Activities). Adelaide's reputation as a 'festival city', with events like the Adelaide Fringe, generates significant economic and cultural value. Innovative startups further indicate strong creative momentum.
- **Motion Picture and Sound Recording Activities** in SA have below-national overall economic specialisation but show strength in post-production services. Adelaide hosts globally competitive post-production and VFX firms, and has established university-industry pathways, such as a joint VFX training program with Adelaide University. While university research specialisation is below national, this strong track record suggests good potential for further investment and industry alignment.

Cross-cutting capabilities

The merged Adelaide University's cross-cutting research strengths in Mathematical Sciences, Artificial Intelligence and Machine Learning, and Sensors and Sensing provide foundational support for innovation across diverse industry sectors.

With globally recognised expertise and flagship centres like the Australian Institute for Machine Learning, the Future Industries Institute and the Institute for Photonics and Advanced Sensing, the university is driving technology adoption and economic impact in areas such as manufacturing, agriculture, healthcare, and defence.

These interdisciplinary capabilities, combined with the university's Signature Research Themes, position Adelaide University as a powerful engine for industrial transformation, economic diversification, and innovation-led growth in South Australia.

Assessing university-industry alignment

Understanding the alignment between SA's economic structure and university research is critical to informing strategic decisions about where the newly merged Adelaide University can maximise its impact.

This report examines the alignment between SA's economic specialisation and Adelaide University's research specialisation across industries relevant to Adelaide University's five Signature Research Themes. Comparing patterns of economic and research activity provides a structured view of university-industry alignment.

Industries are classified into four quadrants (Figure 1) based on whether both the state and the university exceed or fall below national benchmarks. Beyond identifying alignment, the analysis incorporates additional indicators, such as business R&D expenditure, industry co-authored publications, and startup activity, to capture the broader innovation context.

This approach allows us to ask targeted questions:

- Where do strong university research capabilities align with SA's industrial strengths?
- Which sectors are economically significant but under-represented in the university's portfolio?
- Is university research concentrated in sectors that are not currently strong in the state economy?
- Are globally critical sectors under-represented in either the economy or the university's portfolio?

Strategic opportunity

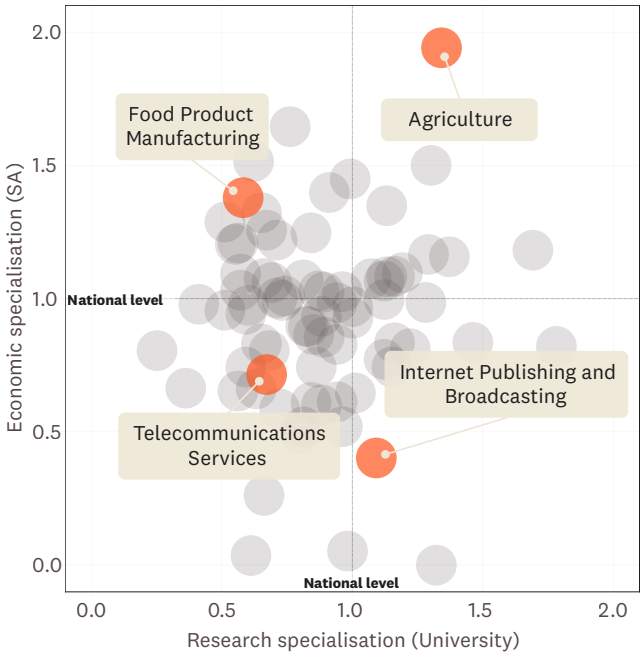
(e.g., Food Product Manufacturing)

These industries are economically significant locally but under-represented in university research.

Low priority/ latent opportunity

(e.g., Telecommunications)

These industries are under-represented both economically and in university research.



Existing alignment

(e.g., Agriculture)

These industries are both economically significant and well-represented in university research.

Niche research strength

(e.g., Internet Publishing and Broadcasting)

These industries are not currently central to the state's economy but are well-represented in the university's portfolio.

Figure 1

Simplified representation of the four quadrants, with industry examples (based on the ANZSIC industry classification). The horizontal axis shows the University of Adelaide's research specialisation; the vertical axis shows South Australia's economic specialisation. A more complete analysis follows.

Source: Scopus and Australian Bureau of Statistics (ABS)

Agriculture, Food and Wine

The establishment of Adelaide University's integrated Agriculture, Food, and Wine research theme marks a significant step toward enhancing SA's economic and innovative capacity in these sectors. By leveraging its interdisciplinary strengths, and local and global collaborations, the university aims to translate research into tangible outcomes.

Research strengths in agri-food

Adelaide University's research in the Agriculture, Food and Wine Signature Research Theme (SRT) spans multiple areas from Agricultural, Biological, Biomedical and Chemical Sciences to Commerce and Economics and is partnered with the State Government through a formal Alliance.

Based on publication output and citation impact, the university demonstrates particular strengths in Crop and Pasture Production, Food Sciences and Plant Biology, among other fields.

The university's portfolio also includes highly interdisciplinary work at the intersection of agriculture, economics and business, notably in fields like Applied Economics, Banking, Finance and Investment, and Marketing. This research encompasses topics such as agricultural industry trends, market dynamics, consumer behaviour, food retailing, and labelling practices — highlighting complementary strengths in socio-economic dimensions of agri-food systems.

This interdisciplinary nature of Adelaide University's approach to the Agriculture, Food and Wine SRT will be critical in defining the university contribution to the industry.

Commercialisation activities

Adelaide University actively commercialises its agri-food innovations through spinouts and patents, with notable examples like ART Lab Solutions, which develops livestock reproductive technologies, and Bygen, which produces high-quality activated carbon relevant to food production.

Over 10% of its patent portfolio relates to the Agriculture, Food, and Wine SRT, with patents focused on sustainable agriculture, crop resilience, environmentally friendly pest control, and resource efficiency, all demonstrating high technological impact.

Alumni-founded companies, such as Seed Terminator and MEQ Probe, further showcase Adelaide's entrepreneurial strength, with many staying within SA, reflecting the university's role in fostering local industry development.

Australian Grain Technologies: seeds of success

A pioneering partnership in plant breeding is delivering high-yield, resilient crops that support farmers and drive industry growth

Australian Grain Technologies (AGT) develops high-yield, resilient crops that address climate challenges and market needs, significantly boosting Australian agriculture and job creation.

Adelaide University collaborates with AGT to research new traits for breeding programs, and together they established the Australian Plant Breeding Academy in 2021 to fund scholarships, train breeders, and advance research. This partnership enhances productivity, ensures reliable harvests even during droughts, and maintains AGT's leadership in Australian plant breeding.

University-industry alignment in *agri-food sectors*

Strong alignment between Adelaide University's research focus and the SA economy exists in Agriculture — the main subdivision within Agriculture, Forestry and Fishing — as well as Wine Manufacturing. Other agri-food subindustries, however, present alignment and value-add opportunities, from Aquaculture and Fishing to Wood Product Manufacturing.

The Signature Research Theme of Agriculture, Food and Wine encompasses multiple industries within the agri-food value chain, from primary production industry to various agri-food value-add activities in the Manufacturing, Wholesale and Retail Trade and Food Services industries.

The analysis highlights SA's economic specialisation across the entire agri-food value chain. None of the industry subdivisions directly relevant to this SRT fall significantly below the national average in terms of economic value concentration (Figure 2). These industries therefore represent either existing alignments, with varying potential for further growth and economic impact, or misalignments, some of which may present strong strategic opportunities for Adelaide University.

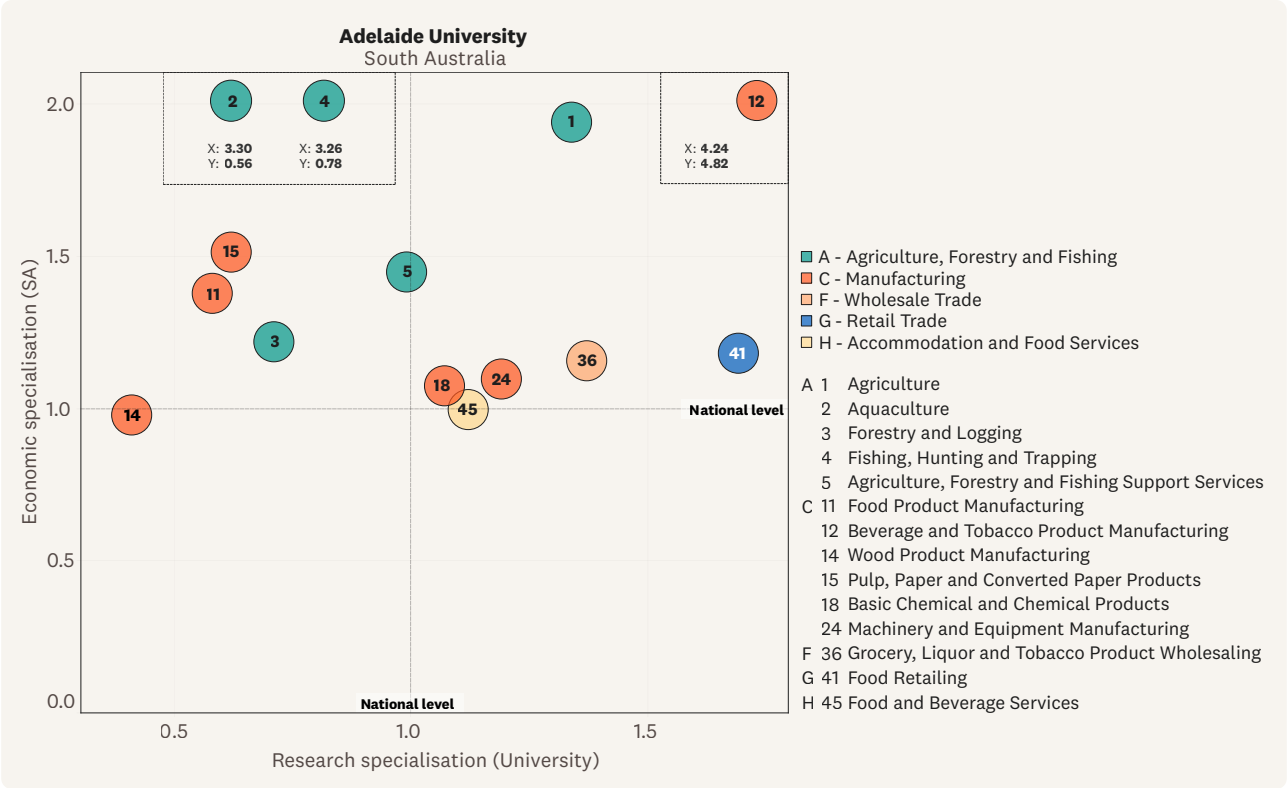


Figure 2

SA economic specialisation and Adelaide University's research specialisation for selected industry subdivisions. The economic data pertain to the end of the 2024 financial year. Research output data cover 2019–2023. Industries shown in insets at the top of the chart (2, 4, 12) are outliers, exhibiting high specialisation in one or both dimensions.

Source: Scopus and Australian Bureau of Statistics (ABS)

Existing university-industry alignments

High-impact university-industry alignments are evident in the primary Agriculture and Wine Manufacturing sectors.

Agriculture (1)

Agriculture is the largest subdivision within SA's broad Agriculture, Forestry and Fishing industry ($18.5 billion in 2022–2023; $7.76 billion from field crops alone). The sector is marked by a strong university-industry collaboration led by Adelaide University's Waite Research Institute, one of the largest agricultural research hubs in the southern hemisphere.

Globally, this sector has a low share of business R&D spending relative to its economic output.

- Adelaide University's research specialisation matches SA's economic specialisation in this sector.
- High concentration of business R&D spending relative to the national level.
- Higher startup activity and greater industry involvement in academic research than in most other sectors in SA.

Beverage Product Manufacturing (12)

Beverage Product Manufacturing is one of SA's largest manufacturing subsectors, with wine and craft beverages as flagship segments. Adelaide University's wine and viticulture programs contribute technology innovations (e.g., yeast strains, sustainability practices) and skilled graduates to the wine sector.

Globally, this sector has a medium-low share of business R&D spending relative to its economic output.

- Adelaide University's research specialisation matches SA's economic specialisation, with the highest level of university–industry alignment of all sectors.
- High concentration of business R&D spending relative to the national level.
- Higher startup activity and greater industry involvement in academic research than in most other sectors in SA.

Strategic opportunities

Several agri-food sectors offer untapped strategic opportunities for Adelaide University and SA to drive knowledge-led economic complexification along the value chain.

Aquaculture (2) and Fishing (4)

Aquaculture and Fishing are dynamic growth subindustries in SA, nationally renowned for several high-value farmed seafoods and premium, export-oriented species. Despite these strengths, aquaculture R&D, for example, remains anchored in state government agencies (e.g. SARDI), with limited academic engagement from Adelaide University, representing a highly strategic opportunity.

Globally, these sectors have a low share of business R&D spending relative to their economic output.

- SA's economy is highly specialised in these industries, but this is not matched by Adelaide University's research specialisation.
- No detectable startup activity or business R&D spending could be identified.
- However, there is some notable industry involvement in academic research.

Agriculture, Forestry and Fishing Support Services (5)

The sector is expanding in technical services, such as precision agronomy and agri-data analytics, driven by global trends in productivity. SA's AgTech ecosystem, supported by initiatives such as PIRSA demonstration farms,[1] fosters innovation and startup activity. Adelaide University, via its Waite and Roseworthy campuses, is poised to enhance research and training in this key sector.

Globally, this sector has a low share of business R&D spending relative to its economic output.

- SA's economy is specialised in this industry, but this is not matched by Adelaide University's research specialisation.
- Higher startup activity than in most other sectors in SA.
- No detectable business R&D spending, and lower industry involvement in academic research than in most other sectors in SA.

Food Product Manufacturing (11)

Food Product Manufacturing is SA's third most specialised manufacturing sector, renowned for premium products such as grain, beef, lamb, and seafood, leveraging the region's agriculture and aquaculture to supply domestic and export markets. Adelaide University is under-specialised in this area compared to the national level, indicating a strategic opportunity for stronger alignment. Food sciences are a core focus of the university's research, but manufacturing-focused food research is likely less developed.

Globally, this sector has a medium-low share of business R&D spending relative to its economic output.

- SA's economy is specialised in this industry, but this is not matched by Adelaide University's research specialisation.
- Business R&D spending is underconcentrated relative to the national level, despite higher business involvement in academic research than in most other sectors in SA.
- Lower startup activity than in most other sectors in SA.

1 Government of South Australia, PIRSA, AgTech demonstration farms

Latent value-add opportunities

Wood product manufacturing falls into the latent opportunity zone, where both the state and the university will need to make efforts to leverage limited but existing R&D-driven economic opportunities.

Wood Product Manufacturing (14)

Despite SA's forestry resources and leadership in certain wood products, the state is not specialised in this sector compared to regions like Tasmania. However, with about 40% of timber leaving unprocessed, this represents a missed opportunity.[2] The state has already committed $15 million for a new Forestry Centre of Excellence in Mount Gambier to drive innovation in forestry and wood processing. Adelaide University could bring expertise in materials engineering and sustainability to support this sector's growth.

Globally, this sector has a medium-low share of business R&D spending relative to its economic output.

- Neither the SA economy nor Adelaide University research are specialised in this sector.
- No detectable startup activity, business R&D spending, or industry involvement in academic research.

2 Government of South Australia, Department of State Development, Forestry and Timber

Defence and National Security

Adelaide University leads SA's defence research with globally competitive strengths in engineering, computing, and applied psychology, directly supporting local industry and national priorities. Its unique engineering and artificial intelligence/machine learning focus and strong local collaborations set it apart.

Defence-related focus areas

The Signature Research Theme (SRT) of Defence and National Security provides a strong foundation for cross-sectoral innovation in SA.

Adelaide University's Defence and National Security work is led by a number of key institutes and research groups such as Defence and Security Institute (DSI), Australian Institute for Machine Learning (AIML) and the Australian Defence Technologies Academy. By leveraging the university's capabilities in computer systems, cybersecurity, AI and applied mathematics and engineering, Adelaide University will catalyse high-impact R&D that aligns with national priorities and enhances the competitiveness of SA firms.

Adelaide University's research related to this SRT is highly concentrated in areas such as Communications Engineering, Electronics, Control Engineering, Computer Vision, Cybersecurity, Artificial Intelligence, Distributed Computing and Applied Mathematics.

There are some notable non-engineering contributions to defence-relevant research from areas like Psychology, addressing issues such as military mental health and PTSD treatment, enhancing situational awareness in complex systems, aviation safety, forensic evidence and investigation.

Commercialisation activities

Adelaide University has produced notable defence-related spinouts such as Fivecast, which provides AI-driven open-source intelligence solutions, and Myriota, specialising in secure satellite IoT communications for remote data transmission — both demonstrating the university's impact on national security and defence.

Approximately 3% of the university's patents pertain to defence and national security, mainly in advanced sensing and signal processing.

While alumni-founded companies in this sector are few, there are notable examples like NanoFynd, which develops rapid substance-detection devices for healthcare and law enforcement.

QuantX Labs: a South Australian leader in defence technology

This university spinout is commercialising advanced photonics and quantum sensing technology to bolster GPS resilience and improve defence capabilities

QuantX Labs, founded on research by Professors Andre Luiten and John Hartnett at Adelaide University's Institute for Photonics and Advanced Sensing, develops optical atomic clocks — including the CRYOCLOCK, which is over 1,000 times more precise than existing systems and enables high-performance radar.

Supported by the University through IP transfer and research collaboration, QuantX Labs' technology now underpins critical defence, space, and terrestrial timing systems, securing major contracts and enhancing system resilience.

University-industry alignment in *defence and security sectors*

There is alignment in defence-enabling industries like Machinery and Equipment Manufacturing, with further opportunities in Transport Equipment Manufacturing, Information and Telecommunications, and Professional, Scientific and Technical Services. The transformation of these sectors, driven by defence needs, creates significant opportunities for the university to lead innovation.

The Defence and National Security SRT will drive the development of advanced capabilities essential for safeguarding national interests, fostering innovation in critical technologies, and strengthening sovereign resilience. Beyond its apparent connection with the Public Administration and Safety industry, this SRT directly intersects with high-value sectors such as Advanced Manufacturing, Professional, Scientific and Technical Services, and Information Media and Telecommunications, ensuring a broad contribution to SA's strategic and economic security (Figure 3).

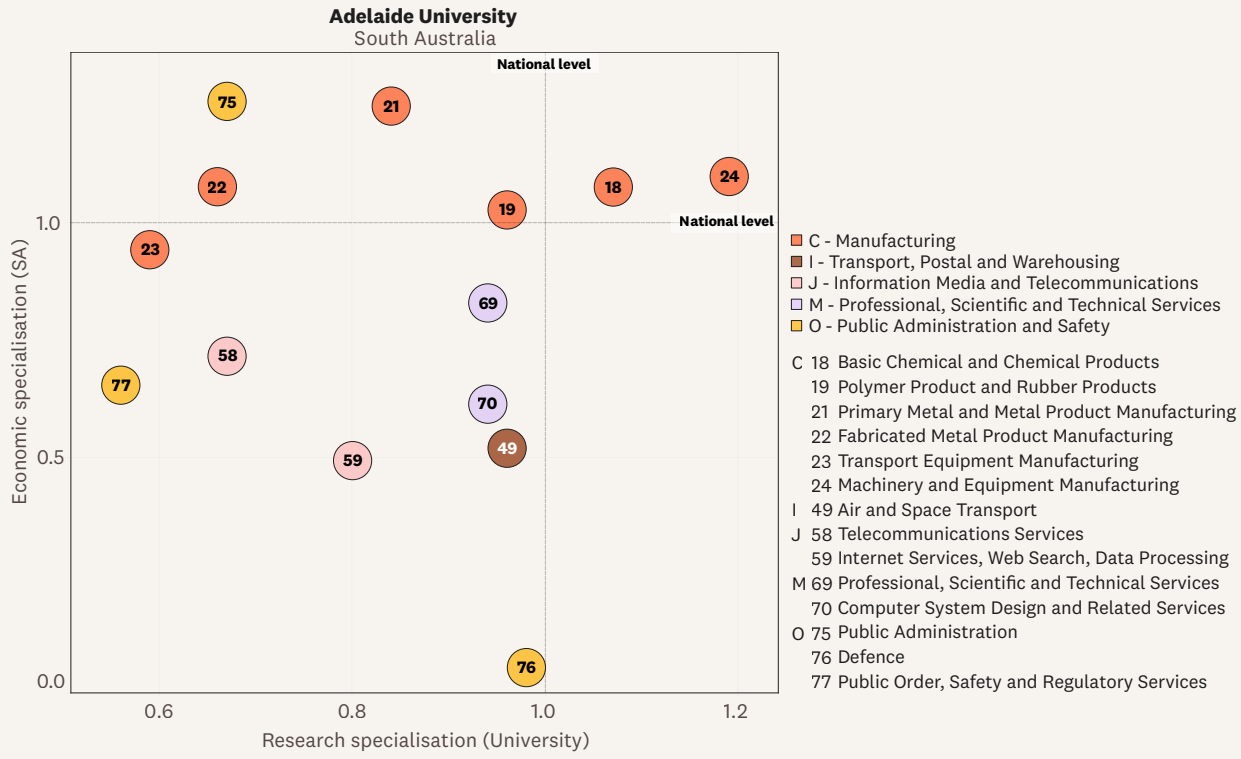


Figure 3

SA economic specialisation and Adelaide University's research specialisation for selected industry subdivisions. The economic data pertain to the end of the 2024 financial year. Research output data cover 2019–2023. Note that for some sectors like Defence (76), the available economic data underrepresents the scope of actual defence-related activities. Based on additional evidence, this sector was classified as a strategic opportunity in the analysis.

Source: Scopus and Australian Bureau of Statistics (ABS)

Existing university-industry alignments

University-industry alignment is evident in Machinery and Equipment Manufacturing, a sector that, while not limited to Defence, offers prospects for research-driven economic growth.

Machinery and Equipment Manufacturing (24)

Machinery and Equipment Manufacturing in SA supports several key sectors, including defence, and is distinguished by specialised SMEs, mid-sized exporters, and the highest startup share in Manufacturing. SA shows above-average business R&D activity, likely driven by export-focused and precision engineering firms. Notable industry-led research, such as from Mirage Photonics (mid-infrared lasers), highlights industry innovation. The newly merged Adelaide University is well positioned to further drive research and innovation in this sector due to its strong research specialisation.

Globally, this sector has a medium-high to high share of business R&D spending relative to its economic output.

- Adelaide University's research specialisation matches SA's economic specialisation in this sector.
- High concentration of business R&D spending relative to the national level.
- Higher startup activity and greater industry involvement in academic research than in most other sectors in SA.

Strategic opportunities

Although Transport Manufacturing and Defence fall into the latent opportunity quadrant due to economic data limitations, additional evidence suggests they represent highly strategic opportunities.

Transport Equipment Manufacturing (23)

Transport Equipment Manufacturing in SA has shifted from automotive assembly to a defence manufacturing hub, centred on the the Osborne Naval Shipyard and major firms such as ASC Pty Ltd, Rheinmetall Defence Australia, and BAE Systems. While overall sector specialisation is slightly below average, the Shipbuilding and Repair Services industry class within this sector shows above-average business concentration. Adelaide University's direct research specialisation in transport equipment is low, but its strengths in defence communications, autonomous systems, and advanced materials position it to support R&D and workforce development in shipbuilding and defence mobility.

Globally, this sector has a medium-high share of business R&D spending relative to its economic output.

- Neither the SA economy nor Adelaide University research are specialised in this sector. However, the state is specialised in Shipbuilding and Repair Services (as part of this sector).
- Business R&D spending is underconcentrated relative to the national level and the industry involvement in academic research is lower than in most other sectors.
- Startup activity in the sector, however, is higher than in most other SA sectors.

Defence (76)

Defence in SA is underrepresented by formal industry data, as much activity occurs in advanced manufacturing, ICT, aerospace, and systems engineering rather than the Defence (76) classification. While business-driven expansion appears limited compared to other states, SA's defence employment concentration is well above the national average, and the sector's economic footprint has doubled to $1.9 billion since 2019–2020, driven by major Commonwealth projects and a growing SME ecosystem.[3] Strong university-industry R&D linkages, such as the Defence Trailblazer program, further support innovation, confirming SA as a critical and rapidly growing hub for Australia's defence capability.

- Based on the quantitative analysis, the state is not economically specialised in the Defence industry, but this formal classification likely underrepresents the scope of defence activities in SA.
- Higher industry involvement in academic research than in most other sectors in SA, although startup activity is limited.

Latent opportunities

Telecommunications, Digital Services, and Professional Services present opportunities for Adelaide University and SA to unlock knowledge-driven economic growth and boost defence innovation.

Telecommunications Services (58)

SA is emerging as a hub for space communications, with organisations like the Australian Space Agency, Fleet Space, and Myriota driving innovation and crossover with the space industry. Business engagement in research and the startup ecosystem is strong, though Adelaide University's sector specialisation is limited, highlighting opportunities for further investment and knowledge-driven growth in telecommunications and related services.

Globally, this sector has a medium-low share of business R&D spending relative to its economic output.

- Neither the SA economy nor Adelaide University research are specialised in this sector.
- Higher startup activity and greater industry involvement in academic research than in most other sectors in SA.

3 South Australia: The Defence State, SA leads the nation in defence industry growth

Internet Services, Web Search and Data Processing (59)

This sector includes ISPs, data centres, and online platforms. Recent developments, including NextDC's new data centre, the GigCity broadband network, and the establishment of local hubs by global firms like Accenture and Capgemini, are creating skilled tech jobs. The sector has a notable startup presence, led by companies such as Complexica. Despite current under-specialisation, there are significant opportunities for knowledge-driven growth.

Globally, this sector has a medium-high share of business R&D spending relative to its economic output.

- Neither the SA economy nor Adelaide University research are specialised in this sector.
- No detectable business R&D spending could be identified and industry involvement in academic research is lower than in most other sectors in SA.
- However, startup activity is higher than in most other sectors in SA.

Professional, Scientific and Technical Services (69)

This fast-growing, high-density sector in SA is vital to the defence and space industries. While SA's overall economic specialisation is not above the national average, strong business R&D spending and startup activity indicate significant potential. Adelaide University supports innovation and economic growth in this cross-disciplinary sector, despite no clear research specialisation, which is difficult to measure due to its broad scope.

Globally, this sector has a medium-high to high share of business R&D spending relative to its economic output.

- Neither the SA economy nor Adelaide University research are specialised in this sector.
- High concentration of business R&D spending relative to the national level.
- Startup activity is among the highest across SA's sectors.

Sustainable Green Transition

Adelaide University's Sustainable Green Transition research spans engineering, chemistry, agriculture, environmental science, and the social sciences, among other disciplines. This broad expertise positions it as a pivotal contributor to SA's net zero and resilience goals.

Adelaide University's transition research

The Signature Research Theme (SRT) of Sustainable Green Transition will underpin Adelaide University's contribution to SA's net zero ambitions, positioning it to lead on complex transitions in energy systems, resource use, industrial decarbonisation and environmental resilience.

The interdisciplinary nature of this SRT is clearly reflected in Adelaide University's publication output with notable contributions across Engineering, Chemical Sciences, Built Environment, Agriculture, Environmental Science, Human Society and Commerce. The diversity of thematic areas reinforces the transformative potential of this SRT across multiple industries and systems.

Adelaide University demonstrates particular strengths in chemical research related to batteries, electrochemical energy storage, photovoltaics, water treatment, and biomass. Its engineering-oriented research spans concrete innovation, waste management, advanced construction materials, energy conversion, and soil remediation, while in agricultural and biological sciences, the university excels in plant growth and stress tolerance, agricultural productivity, and assessing climate impacts on agriculture and ecosystems.

Commercialisation activities

Adelaide University demonstrates strong innovation in sustainability through notable spinouts such as OptiGrid (AI optimisation for renewables), Sparc Hydrogen (green hydrogen), Adelitics (sustainable water analytics), and Bygen (low-emission activated carbon).

Around 13% of its patent portfolio is focused on clean energy and environmental technologies, with high technological impact and broad market reach.

Alumni-founded companies further highlight South Australia's strengths in space technology, agri-tech, and clean energy, with leaders like Fleet Space Technologies and Economical Energy driving global impact in the renewable transition.

Bygen: turning waste into worth

Adelaide University spinout turns low-quality waste into high-quality activated carbon

Bygen transforms agricultural waste into high-quality activated carbon using a low-energy process, giving it a major cost advantage in global markets.

Supported by the University's Commercial Accelerator Scheme and ThincLab incubator, Bygen has expanded to four countries, secured significant funding, and is building new plants aiming to become the world's largest activated carbon producer.

University-industry alignment in *key transition sectors*

SA's utilities, construction, and transport sectors form the essential backbone of the state's economy and are undergoing transformation toward renewable energy and smart infrastructure. While Adelaide University is highly aligned with the Water and Waste Treatment sectors, there are opportunities to strengthen alignment with energy transition, construction, and emerging transport technologies.

The Sustainable Green Transition SRT will catalyse innovation aimed at decarbonisation, resource efficiency, and environmental resilience, enabling Adelaide University to play a pivotal role in driving low-carbon industries and sustainable infrastructure. Beyond its core focus on Electricity, Gas, Water and Waste Services, this SRT intersects with and has implications for multiple other industries, supporting the development of clean technologies, circular economy models, and green mobility solutions (Figure 4).

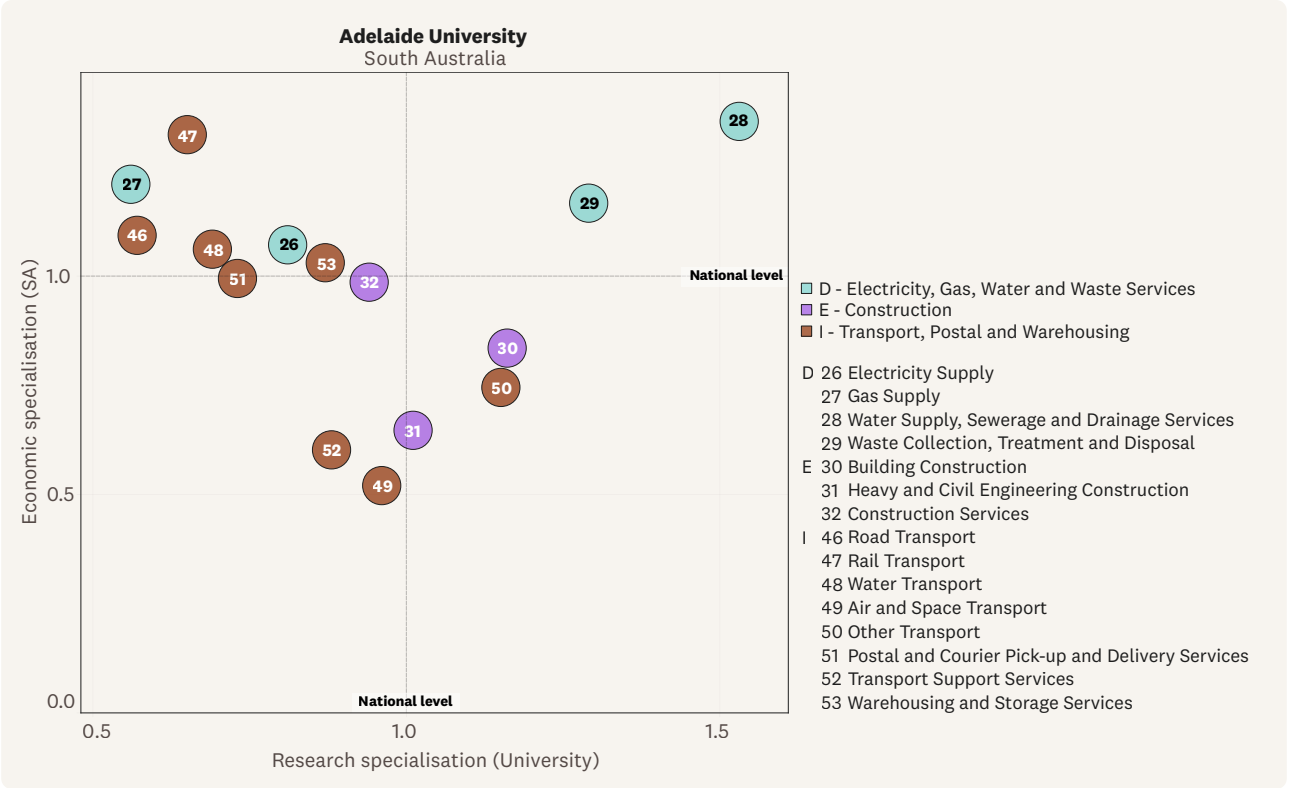


Figure 4

SA economic specialisation and Adelaide University's research specialisation for selected industry subdivisions. The economic data pertain to the end of the 2024 financial year. Research output data cover 2019–2023.

Source: Scopus and Australian Bureau of Statistics (ABS)

Existing university-industry alignments

Strong alignment is evident in SA's water and waste management sectors, which show national leadership in water security and resource recovery.

Water Supply, Sewerage, and Drainage Services (28)

This sector has the highest economic concentration and research specialisation in the state's utilities division. This reflects the critical importance of water in SA's dry climate and a strong tradition of innovation in water security. The sector includes a robust mix of SMEs and major firms (e.g., SA Water, TRILITY, Sentek) that collaborate closely with academic institutions. Regional R&D capacity is further strengthened by organisations like the Goyder Institute and active partnerships across the new Adelaide University's founding institutions.

Globally, this sector has a low share of business R&D spending relative to its economic output.

- Adelaide University's research specialisation matches SA's economic specialisation in this sector.
- No detectable business R&D spending could be identified, although the industry involvement in academic research is higher than in most other sectors in SA.

Waste Collection, Treatment and Disposal Services (29)

The state leads nationally in resource recovery, with 82.3% of waste diverted from landfill in 2022–2023,[4] driven by progressive policies like the container deposit scheme and bans on single-use plastics. The 2020–2025 Waste Strategy aims for zero avoidable landfill waste by 2030, spurring investment in advanced recycling and new markets. While startup activity is limited, ventures such as Bygen[5] and university-industry collaborations highlight the sector's potential for circular innovation.

Globally, this sector has a low share of business R&D spending relative to its economic output.

- Adelaide University's research specialisation matches SA's economic specialisation in this sector.
- No detectable business R&D spending could be identified, although the industry involvement in academic research is higher than in most other sectors in SA.

4 Government of South Australia, Green Industries SA, Circular Economy Resource Recovery Report (CERRR) 2022–2023

5 It should be noted that Bygen is headquartered in Victoria and therefore is not captured by Dealroom data as an SA startup.

Strategic opportunities

Electricity and Gas Supply sectors present strategic opportunities for Adelaide University and SA, leveraging strengths in renewables, hydrogen innovation, and advanced energy systems.

Electricity Supply (26)

SA's Electricity Supply sector is internationally recognised for its rapid transition to renewable energy, with 70% of generation from wind and solar in 2023 and a target of 100% net renewables by 2027.[6] This transformation has been underpinned by large-scale wind farms and grid-scale batteries (e.g. Hornsdale Power Reserve). While Adelaide University's research specialisation in electricity supply is below average, it maintains strong expertise in renewable energy systems and has made energy innovation a strategic priority.

Globally, this sector has a low share of business R&D spending relative to its economic output.

- SA's economy is specialised in this industry, but this is not matched by Adelaide University's research specialisation.
- High concentration of business R&D spending relative to the national level.
- Higher startup activity and greater industry involvement in academic research than in most other sectors in SA.

Gas Supply (27)

SA's Gas Supply sector, though small and consolidated, plays a strategic role in national distribution and is shifting toward low-carbon energy. While traditional natural gas use has plateaued, advances in hydrogen blending and renewable gas — such as the Hydrogen Park SA project's integration of green hydrogen — are underway. Adelaide University's strengths in materials science and energy systems position it to support hydrogen transition and decarbonisation through closer industry collaboration.

Globally, this sector has a low share of business R&D spending relative to its economic output.

- SA's economy is specialised in this industry, but this is not matched by Adelaide University's research specialisation.
- No detectable startup activity or business R&D spending could be identified. However, the industry involvement in academic research is greater than in most other sectors in SA.

6 Government of South Australia, Energy & Mining, Our Electricity Supply and Market

Personal and Societal Health

Adelaide University leads SA in Personal and Societal Health research with recognised strengths in clinical sciences, public health, and applied care. Its focus on innovation and workforce development positions the university as a key driver of the state's fast-growing health sector.

Health research focus areas

Over the past decade, the health sector has become SA's largest industry, consistently outpacing growth in other sectors.

This expansion is driven by demographic trends such as population ageing, the rising prevalence of chronic disease, and increasing demand for aged care and disability services. In this context — and as SA transitions toward a knowledge-based economy — health and biomedical innovation have emerged as strategic priorities for sustainable economic development.

The new Adelaide University plays a central role in advancing this agenda through flagship research centres such as the Robinson Research Institute and the Adelaide Medical School, which offer internationally recognised expertise in reproductive and maternal health, neuroscience, population health, and health technology.

Commercialisation activities

Adelaide University is a driver of health innovation in South Australia, with notable spinouts such as Ferronova (nanoparticle cancer imaging), Carina Biotech (next-generation CAR T therapies), and Aucentra Therapeutics (oncology drugs), alongside emerging ventures in fertility and advanced materials.

Over 41% of the university's patent portfolio is focused on personal and societal health, with high citation impact and broad market coverage, reflecting strong influence in precision medicine and diagnostics.

Alumni-founded companies in SA are particularly active in medtech and AI-driven healthcare, including Life Whisperer Diagnostics, which is internationally recognised for its IVF technology, and BiomeBank, a leader in microbiome-based therapies.

The birth of Repromed: South Australia's top reproductive health provider

How one of Adelaide University's most successful commercialisation ventures has helped tens of thousands of Australian families

Founded by the University of Adelaide in 1987, Repromed bridged academia and clinical practice in reproductive health, pioneering IVF and artificial insemination technologies. By 2006, it became South Australia's leading provider and was sold to Adelaide Fertility Centre.

Repromed and the University achieved major IVF breakthroughs and contributed $20 million to reproductive health research. Today, Repromed continues to advance fertility treatments and support South Australia's healthcare sector.

University-industry alignment in *health sectors*

Health and Residential Care Services as well as Chemical Product Manufacturing are standout areas showing strong alignment between Adelaide University's research focus and SA's economic focus, alongside active business innovation and startup activity. Further opportunities exist to deepen alignment in Hospitals and Social Assistance Services.

The Personal and Societal Health SRT will advance integrated approaches to improving human well-being, social resilience, and health system innovation. Beyond its core alignment with Health Care and Social Assistance, this SRT intersects strongly with selected subdivisions of Manufacturing and Arts and Recreation Services, supporting advancements in preventative health, medical technologies, and community-focused solutions that enhance quality of life and societal outcomes (Figure 5).

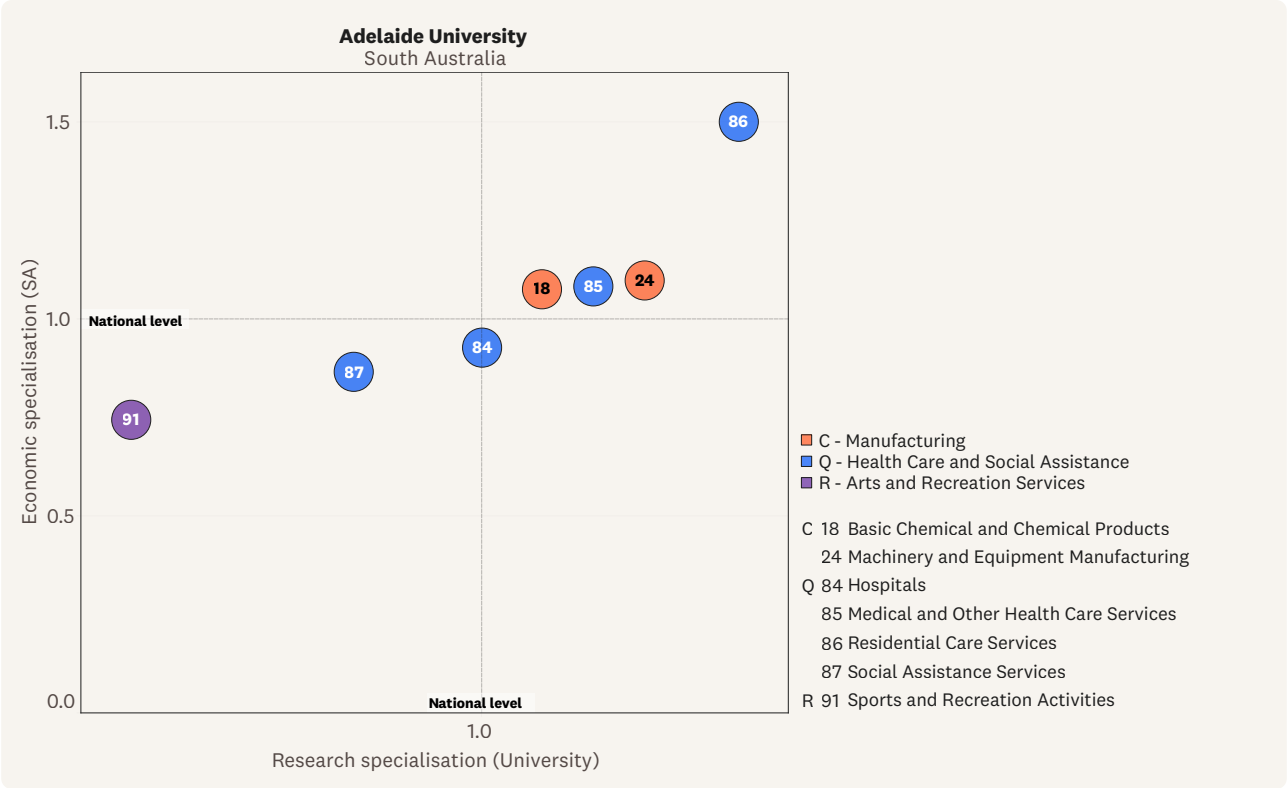


Figure 5

SA economic specialisation and Adelaide University's research specialisation for selected industry subdivisions. The economic data pertain to the end of the 2024 financial year. Research output data cover 2019–2023.

Source: Scopus and Australian Bureau of Statistics (ABS)

Existing university-industry alignments

University-industry alignment is evident in Medical and Other Health Care Services, Residential Care Services and Chemical Product Manufacturing, positioning Adelaide University and SA as leaders in health research, delivery, and biomanufacturing.

Medical and Other Health Care Services (85)

This sector is highly specialised in South Australia, driven by public demand and entrepreneurial activity. Adelaide University's strong research focus aligns with the sector, enabling high-impact collaborations. The state boasts a vibrant biotech and medtech startup scene, with firms like Carina Biotech and Sementis advancing cancer therapies and vaccine technologies. Adelaide BioMed City further fosters integration between entrepreneurs, universities, and medical services to commercialise health innovations.

- Adelaide University's research specialisation matches SA's economic specialisation in this sector.
- Higher startup activity and greater industry involvement in academic research than in most other sectors in SA.

Residential Care Services (86)

This economically specialised sector, shaped by an ageing population, is closely aligned with university research. Though modest in size and dominated by private providers, the sector faces high demand and is seeing innovation in care models and assistive technologies from startups like Care Diary and Flamingo Logic, highlighting potential for further technology-driven collaboration.

- Adelaide University's research specialisation matches SA's economic specialisation in this sector.
- Higher startup activity and greater industry involvement in academic research than in most other sectors in SA.

Basic Chemical and Chemical Product Manufacturing (18)

SA is modestly specialised in Basic Chemical and Chemical Product Manufacturing, with a focus shifting toward high-value pharmaceuticals. Recent investments, such as BioCina's mRNA hub and Noumed Pharmaceuticals' new plant, highlight SA's growing competitiveness in biomanufacturing. There is significant potential to expand university-industry collaboration, particularly in advanced chemical processing and biomanufacturing, leveraging Adelaide University's expertise in process engineering and industrial chemistry.

Globally, this sector has a medium-high to high share of business R&D spending relative to its economic output.

- Adelaide University's research specialisation matches SA's economic specialisation in this sector.
- Business R&D spending is underconcentrated relative to the national level and industry involvement in academic research is lower than in most other SA sectors.
- However, there is some notable startup activity compared to other sectors in SA.

Latent opportunities

Hospitals and Social Assistance Services present opportunities for Adelaide University and SA to strengthen innovation, industry engagement, and knowledge-led growth.

Hospitals (84)

SA's Hospitals sector is dominated by large public hospitals and has low business density. Despite the quantitative findings, R&D and innovation are prominent in SA's hospital sector. Adelaide BioMed City co-locates the RAH with research institutes and the University's medical school, facilitating clinical trials and translational research. For example, the precinct is home to the South Australian Health and Medical Research Institute (SAHMRI).

- Neither the SA economy nor Adelaide University research are specialised in this sector.
- No detectable business R&D spending could be identified.
- Industry involvement in academic research and startup activity are lower than in most other sectors in SA.

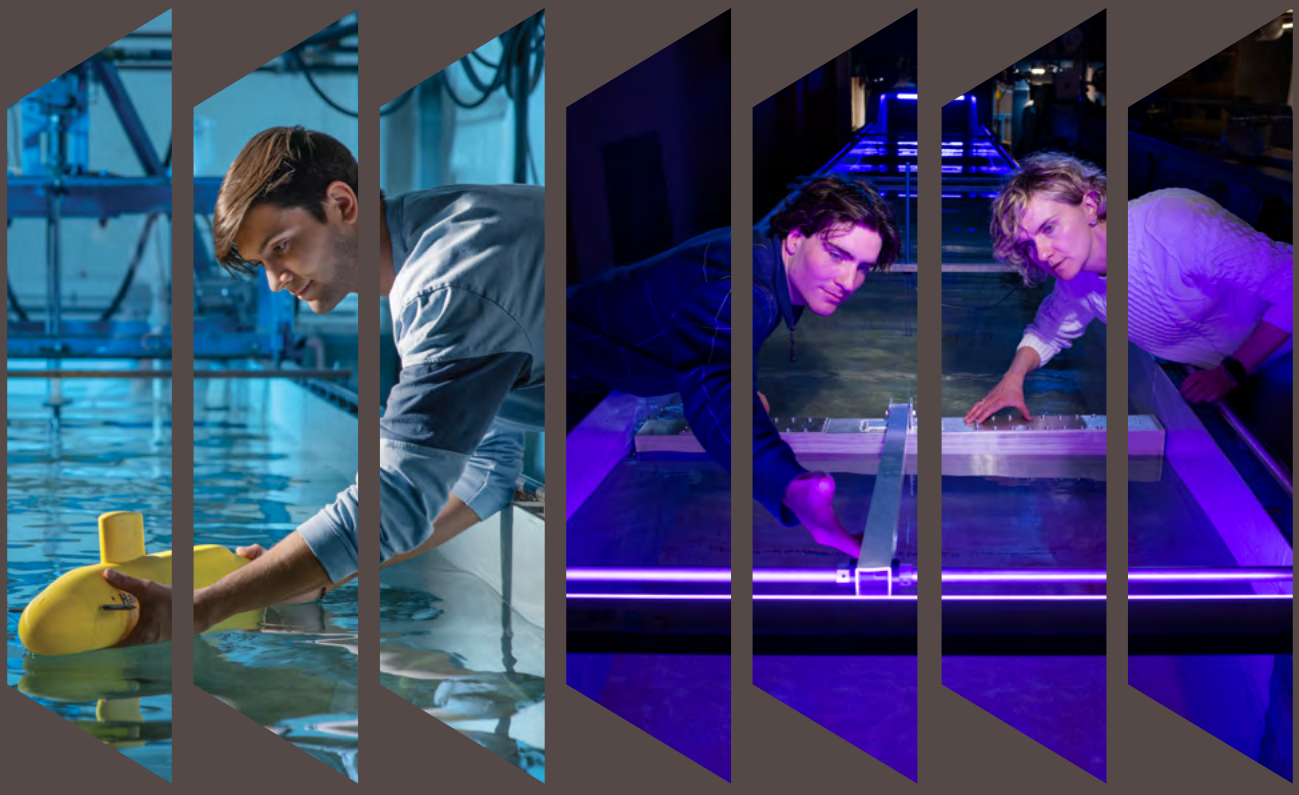
Social Assistance Services (87)

This is a diverse sector with many small businesses and NGOs providing disability, childcare, and community welfare services, largely funded and regulated by government. While entrepreneurial activity is limited, some tech startups and social enterprises are emerging, particularly in digital platforms and mental health support. Collaboration across healthcare, technology, and research is strong, indicating potential for innovation and improved service delivery. However, compared to other sectors, the economic growth and complexification opportunities may be less pronounced due to the sector's structure and funding model.

- Neither the SA economy nor Adelaide University research are specialised in this sector.
- No detectable business R&D spending could be identified. Industry involvement in academic research is lower than in most other sectors in SA.
- However, there is some notable startup activity compared to other sectors in SA.

Creative and Culture

Adelaide University's research in the Creative and Culture SRT is distinguished by its focus on applied creativity. Its regionally focused, collaborative approach positions the university as a key driver of SA's creative economy.



Research strengths

The Creative and Culture Signature Research Theme (SRT) positions Adelaide University as a driver of SA's cultural transformation, supporting the development of a vibrant, inclusive and knowledge-rich creative economy.

This SRT encompasses research and innovation activities across the arts, humanities, design, media, architecture and cultural studies, and engages with SA's evolving identity as a centre for artistic production, Aboriginal and Torres Strait Islander cultural renewal, and digital creativity.

The new Adelaide University has demonstrable institutional strengths in relevant domains, albeit outside traditional research output metrics. Adelaide University hosts the Elder Conservatorium of Music, Australia's oldest tertiary music academy, and operates venues such as the Scott Theatre, Little Theatre, Samstag Museum of Art and SASA Gallery.

Strong university research contributions in this theme are mostly spread across areas such as Built Environment, Commerce, Creative Arts, Education, Human Society and Language.

There are also notable contributions in History and Information and Computing Science. The latter field is quite representative of Adelaide University's strengths related to motion picture production and VFX.

Rising Sun Pictures: building a global VFX workforce

Adelaide University partnership builds a world-leading education-industry pipeline in creative technologies

Since 2015, Adelaide University has partnered with Rising Sun Pictures (RSP), a world-leading VFX studio, to co-deliver university degrees in visual effects. The collaboration embeds students in RSP's production environment, creating a direct pipeline of talent.

Nearly 200 graduates now work in the industry, including around 70 at RSP itself. With credits on blockbusters such as *Thor: Ragnarok*, *Black Panther*, and *Game of Thrones*, RSP provides students with unique exposure to cutting-edge workflows. The partnership has launched over 250 careers and set a global benchmark for integrating higher education with the creative industries.

University-industry alignment in *creative sectors*

Creative and Performing Arts Activities is the most economically concentrated Arts and Recreation subdivision in SA, boosted by major events like the Adelaide Fringe, while Adelaide University's research is most concentrated in Gambling Activities through harm minimisation work.

The Creative and Culture SRT will strengthen Adelaide University's role in fostering SA's cultural expression, creative innovation, and the growth of knowledge-intensive industries. Beyond its core alignment with Arts and Recreation Services, this SRT intersects strongly with Information Media and Telecommunications, and to some extent with Professional, Scientific and Technical Services, driving cross-sectoral innovation, enriching cultural capital, and enhancing the global competitiveness of creative industries. While not traditionally R&D intensive or knowledge-driven, the Creative and Culture sectors present opportunities for Adelaide University to support not only the state's economic development, but also its cultural and social vitality.

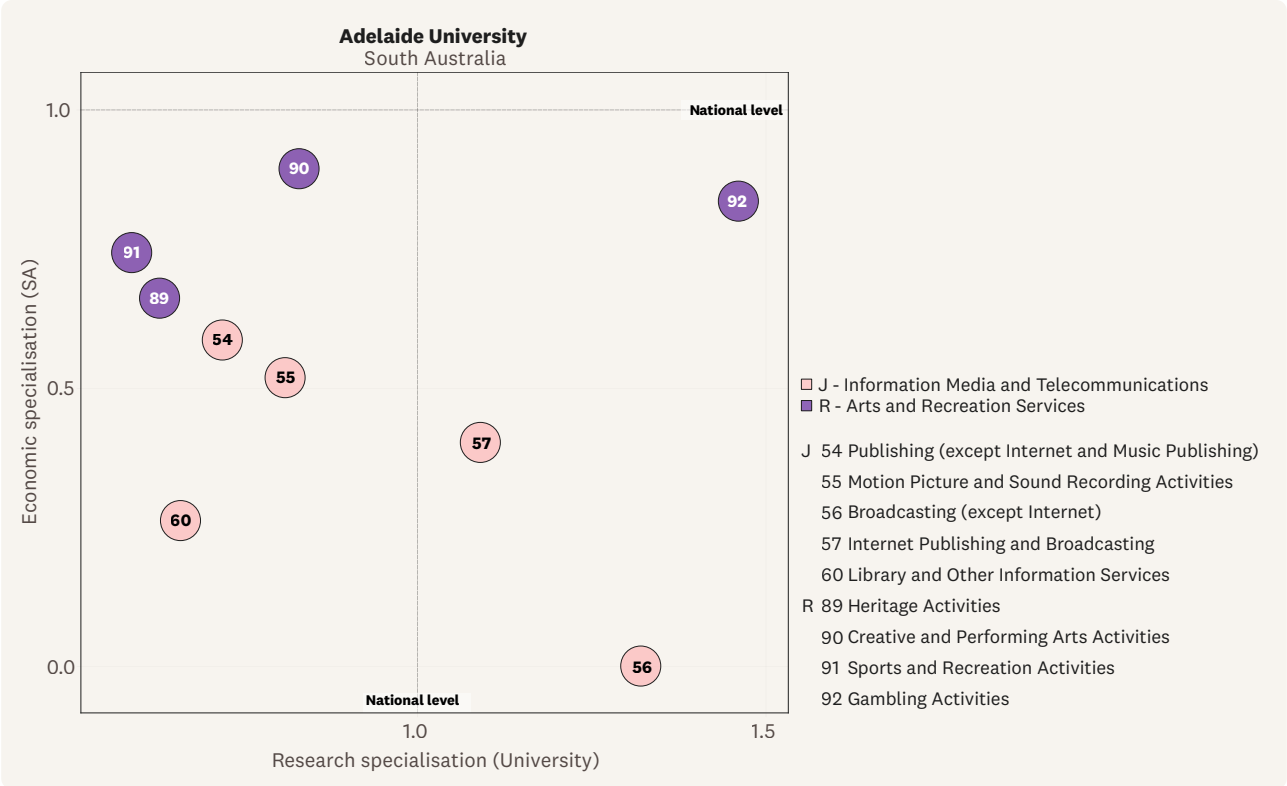


Figure 6

SA economic specialisation and Adelaide University's research specialisation for selected industry subdivisions. The economic data pertain to the end of the 2024 financial year. Research output data cover 2019–2023.

Source: Scopus and Australian Bureau of Statistics (ABS)

Latent opportunities

Creative and performing arts, along with motion picture and sound recording, present opportunities for Adelaide University and SA to build on emerging specialisations.

Creative and Performing Arts Activities (90)

SA's Arts and Recreation Services sector is diverse but lacks strong state-level economic specialisation, with Creative and Performing Arts Activities showing the highest concentration, though still below the national average. Some economic specialisation exists in Performing Arts Venue Operation (as part of Creative and Performing Arts Activities), supported by major events like the Adelaide Fringe. Government funding and a new 10-year cultural policy aim to boost the sector's profile.

Globally, this sector has a low share of business R&D spending relative to its economic output.

- Neither the SA economy nor Adelaide University research are specialised in this sector.
- No detectable business R&D spending or industry involvement in academic research could be identified.
- However, startup activity is higher than in most other sectors in SA.

Motion Picture and Sound Recording (55)

SA is generally under-specialised in this sector but shows specialisation in Post-production Services and Other Motion Picture and Video Activities (as part of Motion Picture and Sound Recording). The sector benefits from institutions such as the SA Film Corporation and Adelaide Studios and is home to leading firms such as Rising Sun Pictures and Mighty Kingdom. Strong university-industry partnerships, notably between Rising Sun Pictures and Adelaide University, support workforce development, positioning SA as a competitive hub for post-production and VFX.

Globally, this sector has a low share of business R&D spending relative to its economic output.

- Neither the SA economy nor Adelaide University research are specialised in this sector.
- No detectable business R&D spending could be identified and industry involvement in academic research is lower than in most other sectors in SA.
- However, startup activity is higher than in most other sectors in SA.

Niche research strengths

Adelaide University demonstrates niche research strengths in gambling harm reduction — supporting positive societal outcomes in South Australia — as well as in Internet Publishing and Broadcasting.

Gambling Activities (92)

Adelaide University shows notable strengths in research on Gambling Activities, specifically addressing harm reduction and the social and economic impacts of gambling. While the gambling industry in SA is small, university research aligns with industry efforts toward sustainable operations and harm minimisation. The Independent Gambling Research Consortium at Adelaide University informs policy through evidence-based measures such as machine caps and self-exclusion programs, contributing to positive societal outcomes rather than sector growth.

Globally, this sector has a low share of business R&D spending relative to its economic output.

- Adelaide University's research is specialised in this sector, although SA's economy is not.
- No detectable business R&D spending could be identified and startup activity is negligible.
- However, industry involvement in academic research is higher than in most other sectors in SA.

Internet Publishing and Broadcasting (57)

SA's Internet Publishing and Broadcasting sector is small but growing, driven by innovation and digital-native content providers. Notable successes include InDaily's rise as a leading online news outlet and government support for regional digital journalism. The state has an active startup ecosystem developing niche digital solutions, and Adelaide's research strengths position SA to expand economic growth in this emerging sector.

Globally, this sector has a medium-high share of business R&D spending relative to its economic output.

- Adelaide University's research is specialised in this sector, although SA's economy is not.
- No detectable business R&D spending could be identified and industry involvement in academic research is lower compared to most other sectors in SA.
- However, startup activity is higher than in most other sectors in SA.

Cross-cutting capabilities

Apart from Adelaide University's thematic priorities, its foundational and significant research capabilities, including in Mathematical Sciences, Artificial Intelligence (AI), Machine Learning, and Sensors and Sensing, will provide essential support to diverse industry sectors.

While this report focuses on Signature Research Themes and their relation to various industry sectors, it should be noted that many of Adelaide University's research strengths lie in interdisciplinary and cross-cutting fields. These foundational capabilities can significantly enhance and accelerate research impact across a broad spectrum of industries.

In an earlier report, *Future Making Research for the Nation (2022)*, cross-cutting research capabilities that span disciplines and provide broad applicability across industry and society were identified. Among them are the University's globally recognised strengths in Mathematical Sciences, Artificial Intelligence (AI), Machine Learning, and Sensors and Sensing.

With the establishment of Adelaide University, these capabilities will be further consolidated and expanded. This consolidation results in a more powerful, globally competitive institution with the critical mass to translate research excellence into economic and social value.

Mathematical Sciences

Mathematical Sciences underpin innovation across diverse sectors, providing essential intellectual infrastructure for industries such as manufacturing, finance, and information technology. The merged university now produces over 80% of South Australia's research output in fields including Applied and Pure Mathematics, Mathematical Physics, and Statistics. Recent applied mathematics research focuses on advanced control and material modelling techniques to enhance system stability and efficiency, with applications in aerospace, robotics, manufacturing, and materials science, particularly in improving fault tolerance and communication in autonomous systems.

Artificial Intelligence and Machine Learning

Artificial Intelligence and Machine Learning have become central to the merged university's research identity. With the Australian Institute for Machine Learning (AIML) as a flagship centre, the university now stands as one of the leading AI research hubs globally. The university demonstrates both strong specialisation relative to the global benchmark in areas such as Computer Vision, Artificial Intelligence and Machine Learning. Research applications span autonomous vehicles, robotics, urban planning, and remote collaboration. Partnerships with major corporations and government-backed initiatives, such as the Industrial AI program, are driving technology adoption across sectors including agriculture, healthcare, mining, space, and defence, positioning SA as a hub for applied AI innovation.

Recent initiatives illustrate how this research strength is being channelled into economic impact. AIML's partnerships with major corporations such as the Commonwealth Bank, as well as programmes supported by SA Government such as the Industrial AI initiative, have created new platforms for technology adoption across multiple industries. From precision agriculture and medical imaging to mining automation, space technology, and defence systems, the merged university's AI and machine learning capabilities are driving digital transformation and elevating the state's profile as a centre for applied AI.

Sensors and Sensing

Sensors and Sensing is another defining cross-cutting capability of the merged Adelaide University. The university shows strengths in Atomic, Molecular, and Optical Physics (which incorporates Optical Physics and Photonics). Its leadership in this field is complemented by multidisciplinary work in other areas such as Engineering and Chemical and Biological Sciences which extend the application of sensing technologies into new domains.

Through centres such as the Institute for Photonics and Advanced Sensing and the Future Industries Institute, the university is at the forefront of developing technologies that underpin innovation across industries. Photonics and sensing research enable new diagnostic tools in health, precision measurement in agriculture, advanced instrumentation in defence, and real-time monitoring for environmental sustainability. These capabilities are strategically aligned with SA's economic priorities, from agriculture and wine to mining and manufacturing, serving as a platform for exportable innovation.

Sustaining Cross-cutting Impact

Taken together, these cross-cutting research strengths, in combination with the Signature Research Themes, provide the merged Adelaide University with a unique ability to shape SA's economic future. Indeed, the merged institution now has the scale, focus, and translational capacity to ensure that these strengths go beyond academic excellence and directly support industrial transformation, economic diversification, and innovation-led growth across the state.

Annex

Note on the methodology

This report presents a summary of a comprehensive analysis prepared by Elsevier in collaboration with Adelaide University. The full analysis, which includes details of the methodology and results across all major ANZSIC industry divisions and subdivisions, is available upon request. Note that while the report maps industries according to their relevance to Adelaide University's Signature Research Themes, the full analysis organises findings by major industry groups to ensure maximum coverage and analytical depth.

Data sources

Scopus is a comprehensive, source-neutral abstract and citation database that covers outputs from over 7,000 publishers in 105 countries across all disciplines. The database includes over 95 million documents across various document types and disciplines, drawing from around 28,200 serials, over 152,000 conferences, and more than 327,000 books. There were 2,395,970 documents (1,482,793 since 2010) with at least one Australian-affiliated author.

scopus.com

Australian Bureau of Statistics is Australia's national statistical agency, responsible for producing a wide range of official economic and social statistics. It plays a central role in providing data to inform government policy, business decisions, and public understanding of national trends. Key outputs include national accounts, labour force surveys, demographic statistics, and business activity data. The ABS also maintains statistical standards, such as the Australian and New Zealand Standard Industrial Classification (ANZSIC), to ensure consistency and comparability of data across sectors and over time.

abs.gov.au

OECD's Statistics and Data Directorate oversees the collection, processing, and publication of high-quality data — covering macroeconomics (like GDP, inflation, unemployment), trade, education, environment, gender equality, and innovation — across diverse interactive formats, dashboards, and methodologies. The data is accessible through the user-friendly tools and is fully open-access under CC-BY-4.0 licensing and supports research, government, and international comparisons with robust methodological transparency.

oecd.org

IP DataDirect is the LexisNexis bulk delivery platform that offers access to the most comprehensive patent data database. It combines patent data from more than 100 authorities (patent offices) around the world into a single, unified, tagged and structured format. IP DataDirect provides one of the world's largest collections of patent data, including machine-translated contents and extracted images.

lexisnexisip.com/solutions/ip-datadirect

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