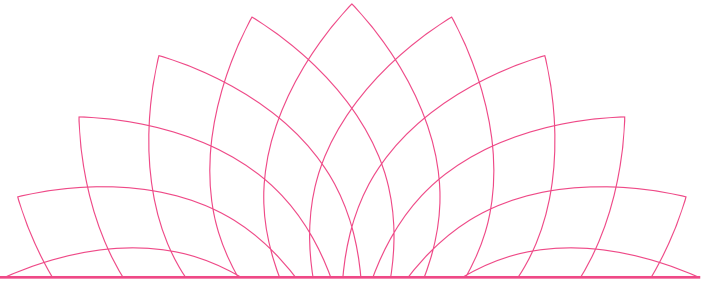




SINTELIX



CASE STUDY

NHMRC: The Patent Dataset Challenge

“NHMRC has benefited greatly from its engagement with Semantic Sciences on multiple projects. Semantic Sciences have delivered high quality solutions on time and within budget”

Tony Kirzan, CFO, CIO National Health and Medical Research Council

About NHMRC



Australia's leading body in health and medical research, the National Health & Medical Research Council (NHMRC) create pathways to a healthier future through their research funding, their health guidelines and the ethical standards they set and uphold.

As the nation's leading expert body in health and medical research, they set themselves high standards of integrity and scientific rigour, seeing themselves as championing the pursuit of better health outcomes for all Australians.

Semantic Sciences and Sintelix

Sintelix was originally created by Semantic Sciences. Sintelix Pty Ltd was formed in 2017 as the company vehicle for Sintelix software. Semantic Sciences utilised Sintelix technology in solving NHMRC's data challenges.

The NHMRC Patent Dataset Challenge

NHMRC has funded 20,000 health and medical research grants with a total value of over \$11 billion. While this has delivered massive benefits to the Australian health system, the full value was unknown so the NHMRC initiated a series of projects to establish the commercial impact of research it has funded.

As research commercialisation in the health and medical domain is strongly dependent on the use of patents, the focus of one of these projects was patent identification. NHMRC engaged Semantic Sciences to assist with this challenge.

The Semantic Sciences Solution

There were three stages used to source and verify patents that are linked to NHMRC funded research. The image on the following page shows the approach taken and flow of data across the three stages.

Stage 1: Automated Patent Identification

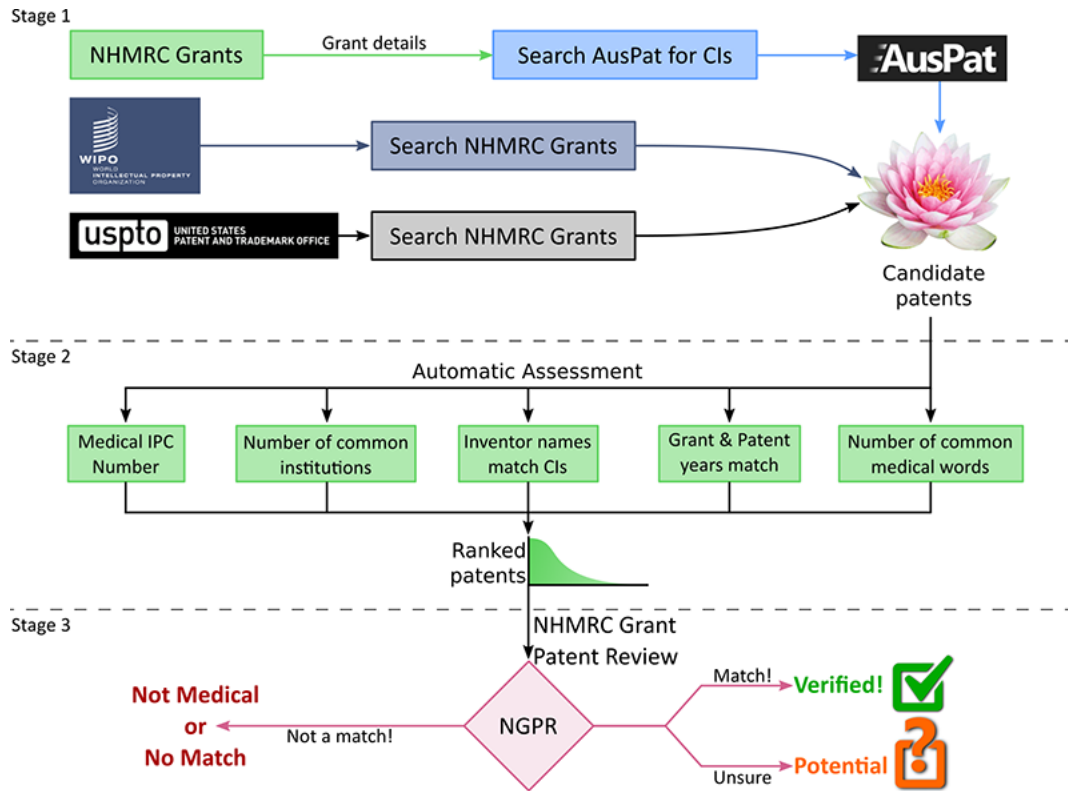
In stage 1 of the project Semantic Sciences used computer automation to compare NHMRC grants with over 10 million patent records gathered from three large repositories: IP Australia, the World Intellectual Property Organisation and the United States Patent and Trademark Office. 65,000 candidate patents were identified.

Stage 2: Scoring and refinement

In stage 2 a sophisticated scoring algorithm was used to further refine the results, reducing the count to 11,497.

Stage 3: Computer-assisted human review

Stage 3 involved a computer-assisted human review process. Semantic Sciences created a web-based patent review system to accelerate this process, resulting in the confirmed discovery of 1,105 new patents with connections to NHMRC grants and a further 1,132 requiring expert confirmation.



Process flow of data exploration approach taken by Semantic Sciences.

Outcomes and Benefits for NHMRC

To demonstrate the viability of assessing the commercial impact of NHMRC-funded research, 10 patents were chosen at random and reviewed for reported sales, product authorisations, commercialisation and follow-on research. The combined commercial impact of these patents was \$862 million.

NHMRC now has a dataset that enables it to continue assessing the commercial value of its research program.

By combining advanced data analytics, the rapid development of a software application for accelerated human review, and swift review processes, Semantic Sciences was able to link research projects to derived patents, which is practically impossible for humans to do unaided. We are now working together to refine the algorithms and the data to further improve outcomes.

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