

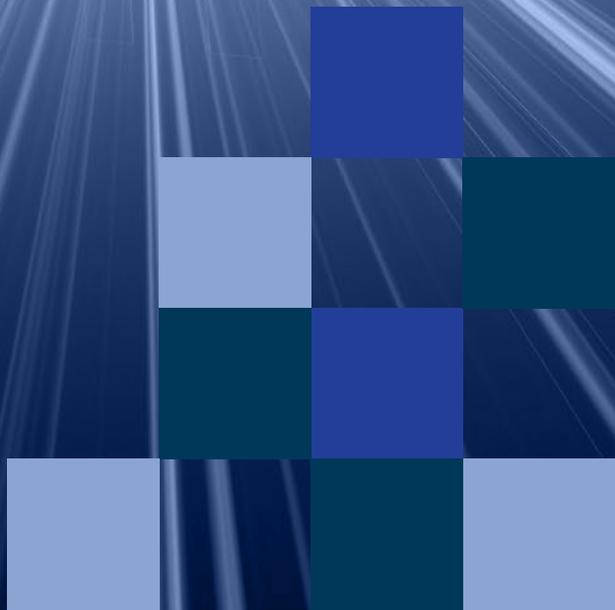
# Medical Technologies and Pharmaceuticals

A Roadmap for unlocking future growth opportunities for Australia

SUMMARY

**CSIRO FUTURES**

CSIRO Futures is the strategic advisory arm of Australia's national science agency.



# Megatrends: How is the sector changing?

## CHRONIC BURDEN

Modern MTP solutions allow patients to manage chronic disease and live longer than ever before, however, this comes at considerable cost to public health systems.

## PRECISION HEALTHCARE

Advances in science and technology are enabling MTP solutions that are tuned to the specific needs of individuals. Targeted pharmaceuticals and bespoke technologies will be delivered that provide improved outcomes for individual patients.

## GLOBAL BIOSECURITY

Recent pandemics highlight the globally transmissible nature of disease. When combined with increased treatment resistance this creates unpredictable threats that will require rapid technology responses.

## CONSUMER CONTROL

Future patients will be educated and informed decision-makers, with more information available to them than ever before. Technology and information access are empowering patients to become more proactive in managing their healthcare.

## DIGITAL EVOLUTION

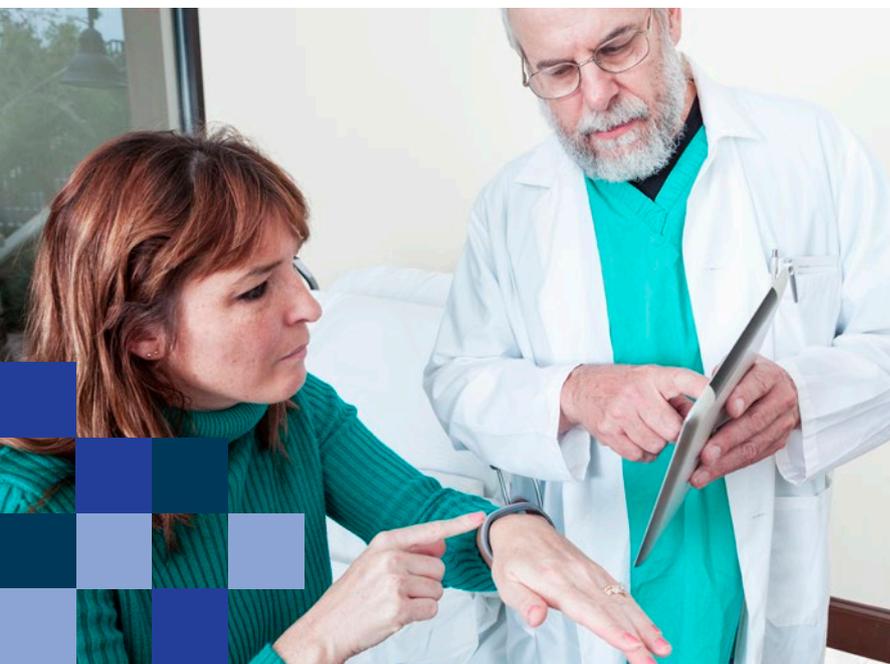
With the massive amounts of data generated daily in the healthcare system, there will be significant shifts in how data is exchanged, processed and used.

## DEVELOPING MARKETS

A rising middle class together with rapid growth in developing countries is creating increased demand for MTP solutions.

## INTEGRATED CARE

Countries are shifting from highly fragmented healthcare systems to those based on end-to-end integration, driven by the need to meet the changing demands of patients and to improve efficiency.



# What challenges do we face?

The Australian MTP sector is underpinned by a number of comparative advantages that will drive opportunities for growth in the sector over the next 20 years. However, the sector also faces a number of challenges that need to be overcome. These include:

- Lagging digital infrastructure and low penetration, functionality and usability of national electronic health records.
- Low rates of collaboration and translation of research.
- A small Australian market and population, with a complex federated approach for policy and healthcare.

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The growth opportunities discussed indicate a bright future for the Australian MTP sector, however, the sector must act quickly or risk losing its place in the global market.

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## How can the sector grow?

Based on the global megatrends and Australia's competitive position, four growth opportunities have been identified for this Australian sector. Each opportunity leverages existing strengths, but requires considerable business and ecosystem actions to overcome challenges, as well as focused technology investment.

These opportunities are:

- 1 Smart devices, implants and bionics**  
Creating an Australian industry strength in designing, testing and manufacturing communicative and responsive devices, bionics and personalised implants for global export.
- 2 Manufacturing high-value pharmaceuticals**  
Focusing Australian manufacturing efforts toward high-value and niche pharmaceutical products to create sustainable export revenue.
- 3 Accelerated pharmaceutical development**  
Fostering a high-quality and efficient early-stage development environment for pharmaceutical products.
- 4 Diagnostic and informatics products and services**  
Developing a world-leading sector based on the development and integration of medical diagnostic and informatics platforms.

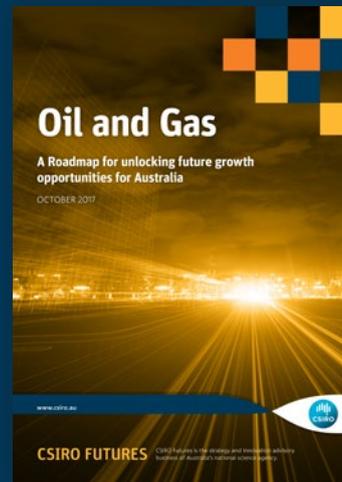
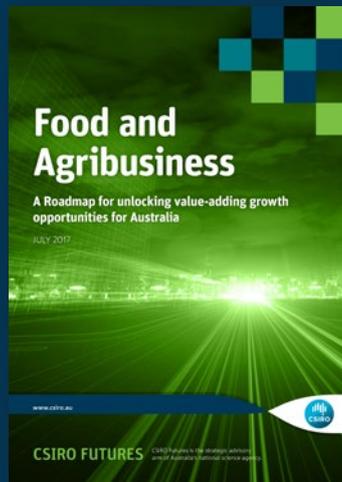
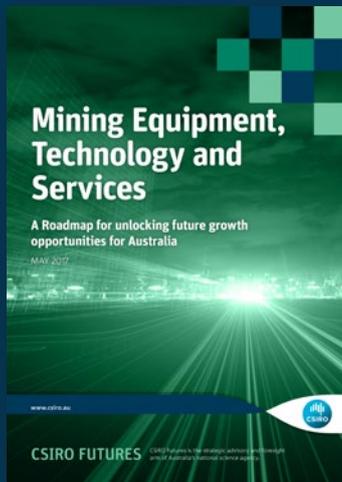
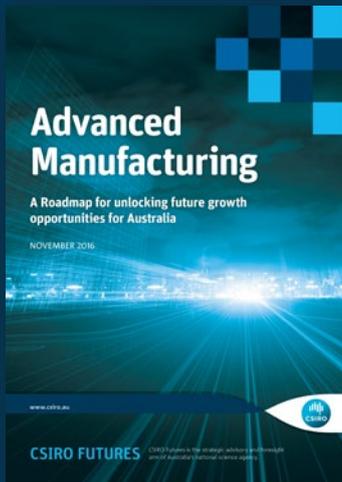
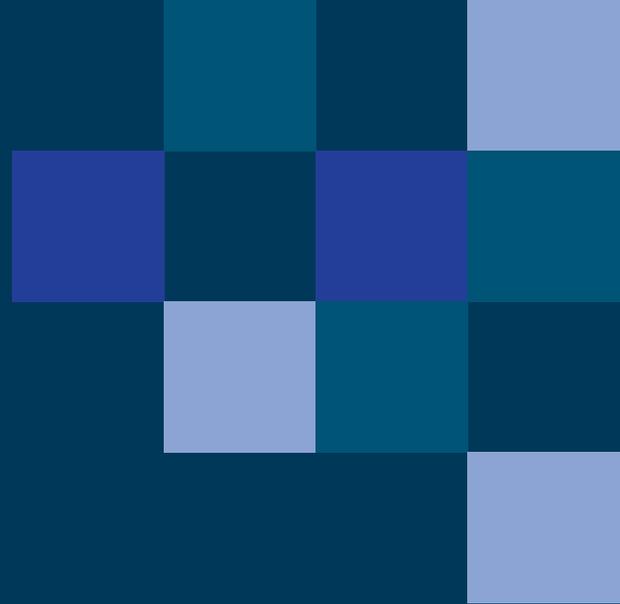
While the growth opportunities indicate a bright future, the sector must act quickly or risk losing its place in a competitive global market. Businesses cannot achieve this in isolation, with action requiring an integrated approach across the entire ecosystem. Three broad change themes were identified that will help position Australia for growth in this sector:

- Investments in digital health strategies concerning infrastructure, data collection and standardisation, health records, and cyber security.
- Changes to the current regulatory environment that will improve the efficiency of local development and improve international market access.
- Improvements to the way academia and industry plan for skills development

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Read more in the full report:  
[www.csiro.au/MTR](http://www.csiro.au/MTR)

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## CSIRO FUTURES

CSIRO Futures is the strategic advisory arm of Australia's national science agency. We work with senior decision makers in Australia's largest companies – and government – to help them translate science into strategy and plan for an uncertain future. We build on CSIRO's deep research expertise to help our clients create sustainable growth and competitive advantage by harnessing science, technology and innovation.

## CSIRO MANUFACTURING

CSIRO Manufacturing plays a leading role as Australian manufacturing shifts focus from heavy industry to high tech products based on sustainable and advanced processes. We harnesses our science and engineering skills, equipment and international connections to keep Australian manufacturers globally competitive.

## CSIRO HEALTH AND BIOSECURITY

CSIRO Health and Biosecurity works together with government, industry and the community to provide leadership and deliver measurable improvement in Australia's one-Health system: enhancing health, social, environmental and economic wellbeing in the face of increased healthcare pressures and global biosecurity threats. Our science and technology innovations aim to address these challenges to ultimately enhance the nation's health system, ease the burden of disease and create new models of healthcare delivery across Australia.

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