

RIE2020 AME Strategy

PM announced RIE2020 on 8 Jan 2016



Govt commits S\$19b to new 5-year plan for R&D initiatives RIE2020

Plan will contribute significantly to the economy and create opportunities and jobs, support national initiatives like Smart Nation and SkillsFuture, and help workers to thrive amidst technological changes and globalisation, says PM Lee.

Public investment in R&D

S\$
billion



THE BUSINESS TIMES

Govt sets aside record S\$19b for science and tech research



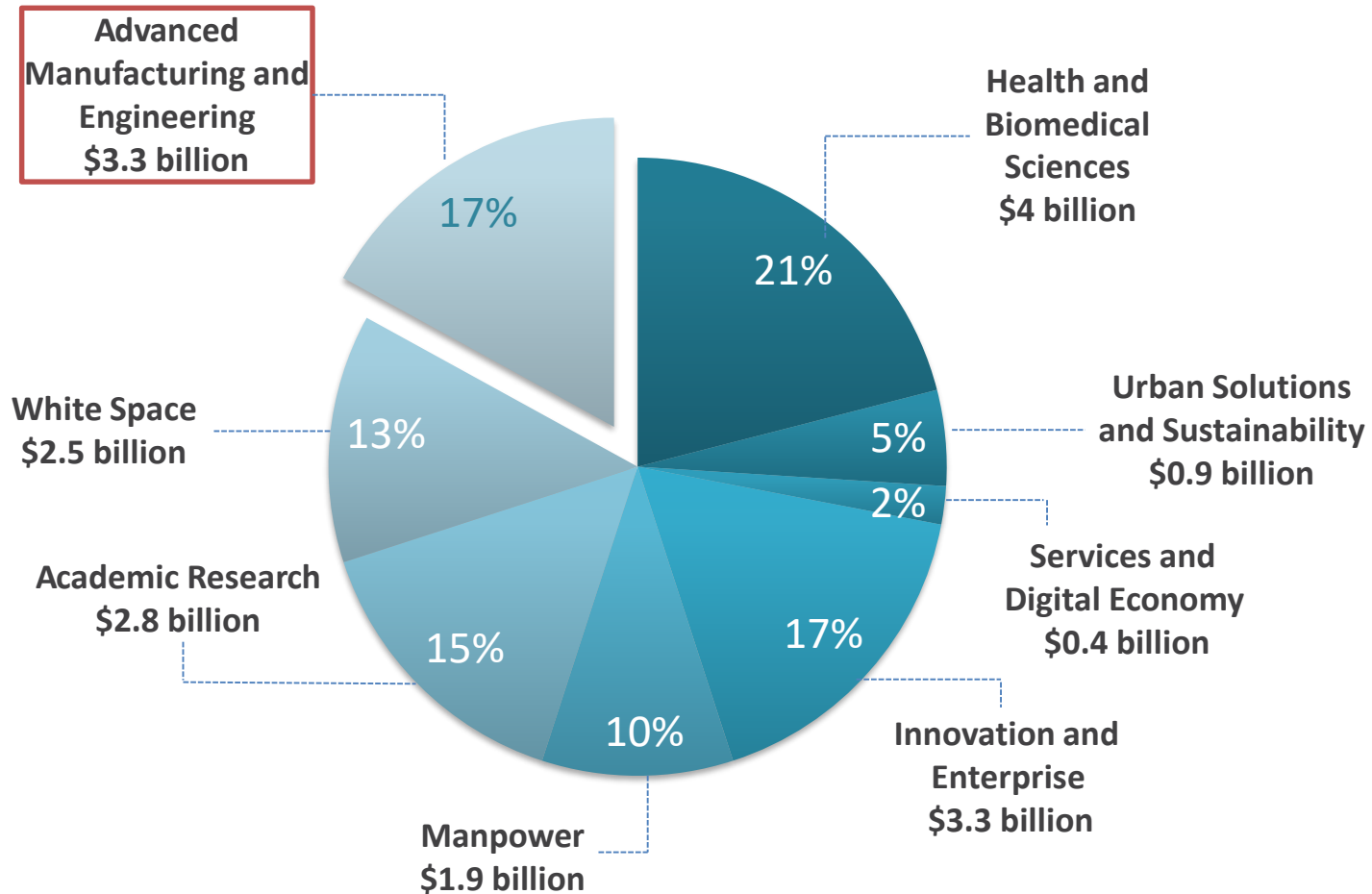
TODAY

Singapore commits S\$19b for new research, innovation and enterprise plan

THE government is committing S\$19 billion for its new Research, Innovation and Enterprise (RIE) 2020 plan, which is 18 per cent higher than the S\$16.1 billion set aside for the previous five-year plan.

- Public R&D spending sustained at 1% of GDP
- Priority in four technology domains

Where S\$19B funds will go ...



Priority in Four Technology Domains

Advanced Manufacturing and Engineering (AME)

To develop technological capabilities that support the growth and competitiveness of our manufacturing and engineering sectors

Health and Biomedical Sciences (HBMS)

To be a leading centre that advances human health and wellness, and creates economic value for Singapore and Singaporeans through the pursuit of excellence in research and its applications

Urban Solutions and Sustainability (USS)

To develop a sustainable and liveable city through integrated solutions for Singapore and the world

Services and Digital Economy (SDE)

To develop, integrate and leverage Singapore's digital innovation capabilities to meet national priorities, raise productivity and support key services, create sustainable economic opportunities and quality jobs

Due to the pervasive and cross-cutting nature of digital technologies, AME, HBMS and USS domains will draw on and fund research in digital technology capabilities that support the research agenda within their domains

Academic Research

To build up a significant base of capabilities and a pipeline of ideas that can feed into applied and industrial research to drive the next phase of growth

Manpower

To build a strong research and innovation community

Innovation and Enterprise

To build up a strong core of innovative enterprises that drive value creation and economic competitiveness

Key RIE2020 Thrusts



Closer Integration of Research Thrusts

- Encourage multi-disciplinary & multi-stakeholder collaboration
- Greater coordination of national efforts
- Strategic investments in basic and mission-oriented research



Stronger Dynamic towards the Best Teams and Ideas

- Continued shift towards competitive funding
- More White Space funding to ensure flexibility



Sharper Focus on **Value Creation**

- Strengthen flow-through from research to societal and economic impact
- More budget allocation towards public-private research collabs
- Build up private sector's absorptive capacities for new tech



Optimise RIE Manpower

- Sustain a strong research and innovation workforce
- Strong Singaporean core, supplemented with international talent

AME RIE2020 Vision

Aims to develop technological capabilities to **support continued growth** and **competitiveness of our manufacturing and engineering sectors**, in order to **generate *GDP growth, Good jobs for Singaporeans & Position the Economy for the Future***

AME RIE2020 Strategic Goals

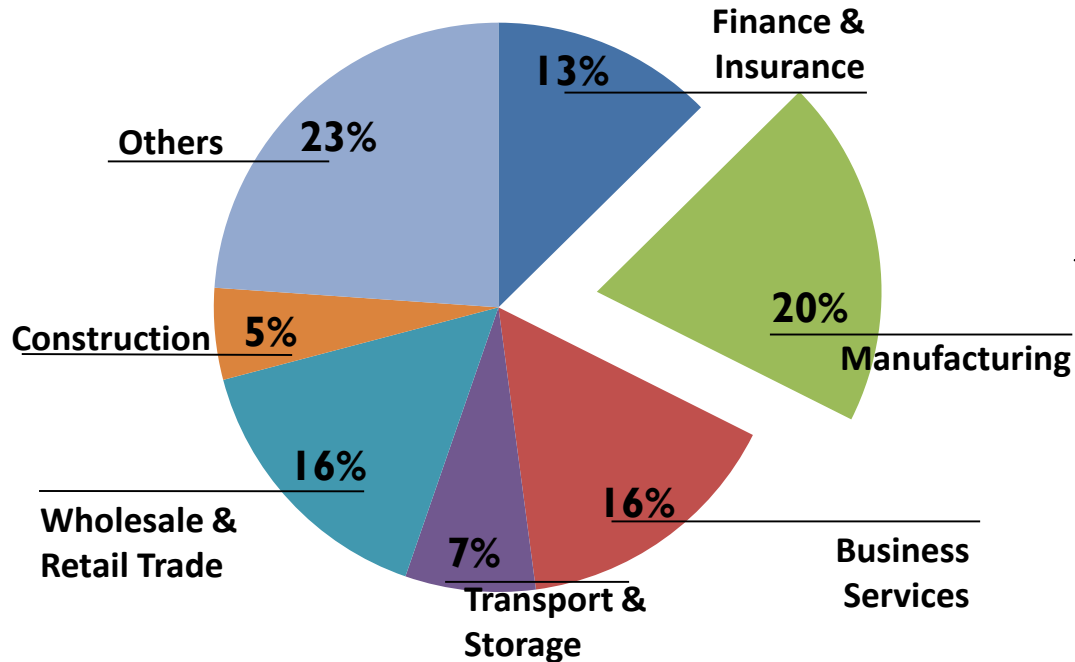
- Strengthen linkages across public research performers and both ***large & small companies to sharpen value creation from public R&D investments***
- Build capabilities where Singapore can offer a **differentiated value proposition**, incl making ***strategic bets ahead of industry*** to position Singapore for emerging opportunities
- Maximise value capture by developing ***integrated strategies across entire innovation value chain***

Key AME Industry Verticals:

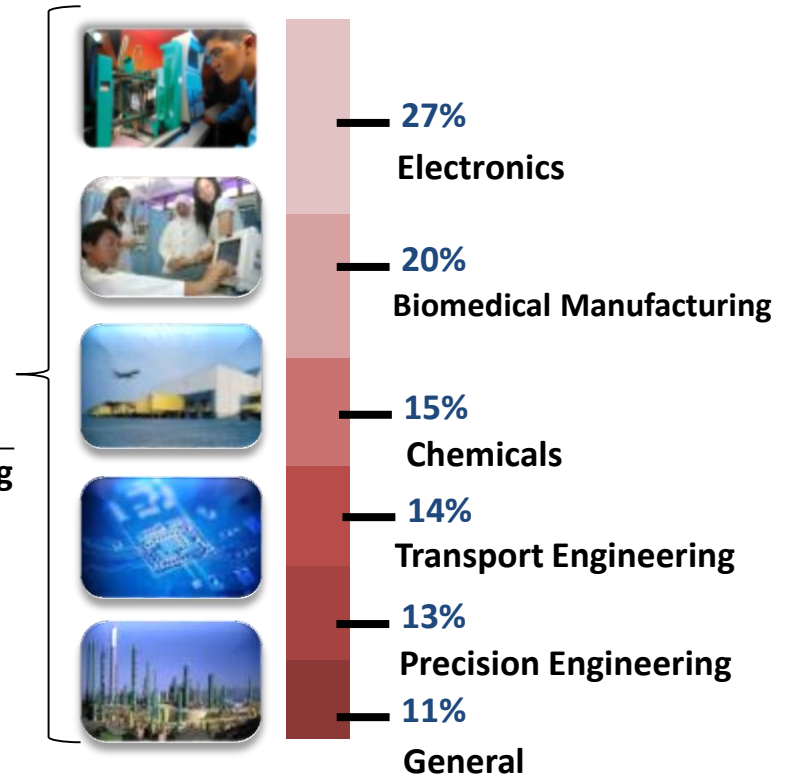


Manufacturing in Singapore Today

2015 GDP: S\$402.5 bil
(US\$292.7 bil)



Value Added



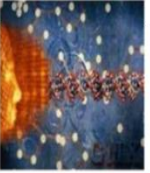
2015 GDP growth: 2.0%

2016 Forecast GDP growth: 1.0% - 3.0%

Source: MTI 2016 Growth Forecast

- Employment contribution **>500,000**
- Manufacturing productivity growth of **6.1% per annum** ('09 to '15)

Manufacturing in Singapore has evolved over time

					
60s	70s	80s	90s	00s	Today
Labour Intensive	Skills Intensive	Capital Intensive	Technology Intensive	Knowledge Intensive	Innovation Intensive

Global trends and local landscape require *a new approach*

Emerging Technologies

Additive Manufacturing |
Robotics | Advanced materials |
Manufacturing IT

Business Model Disruptions

Servitisation of Manufacturing
|
Mass Customisation

Growth of ASEAN

Emerging region for
production and consumption

Sustainability

Land | Energy
| Labour

Competitive Manufacturing Location



- Fast technology adopter
- Host to server & offshore plants

Boosting Productivity

Pilot location for cutting-edge technology & systems

Growing New Activities

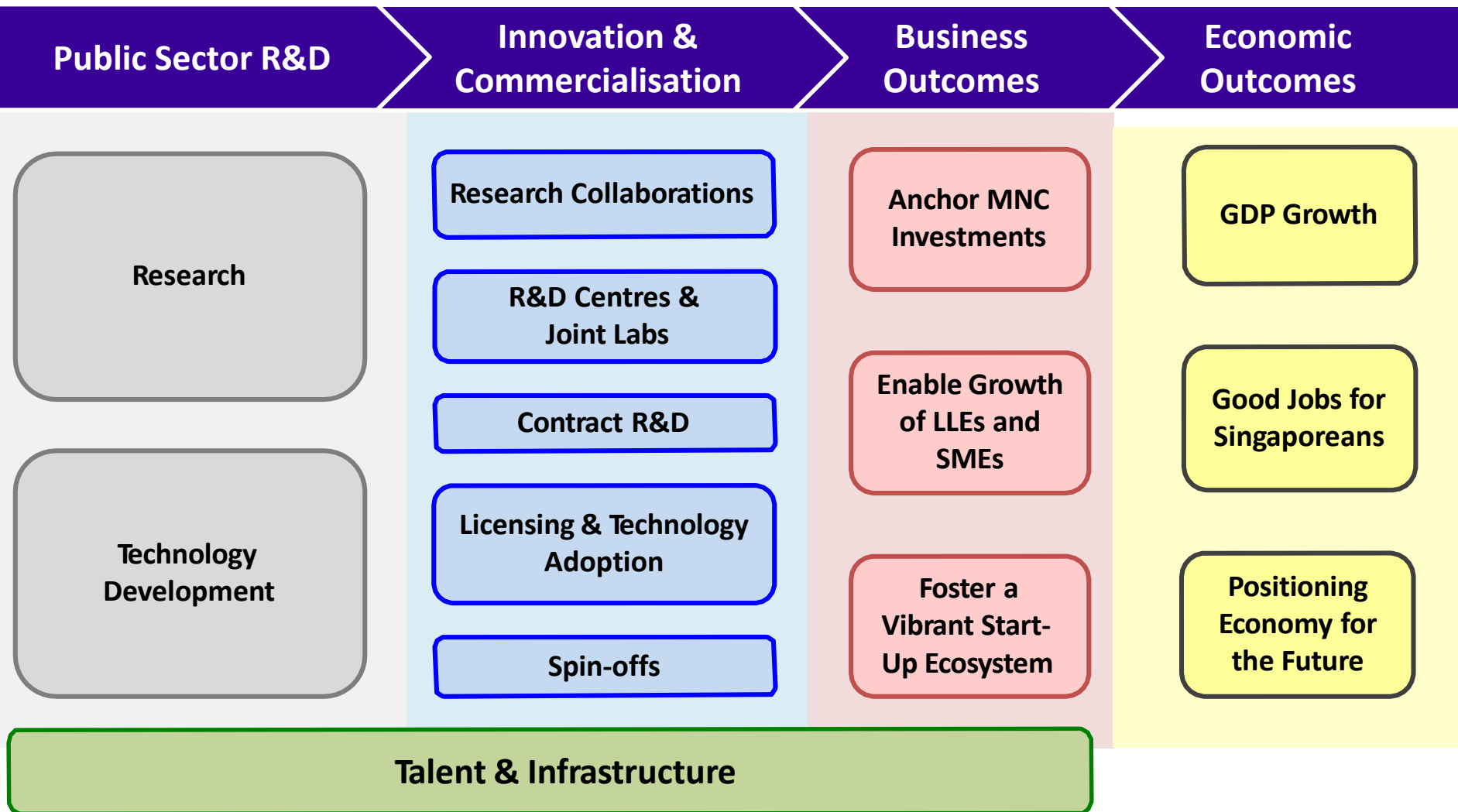
Thought leader and first mover in growth areas.

Globally Leading Manufacturing Hub



- Manufacturing technology developer
- Location of choice for lead plants

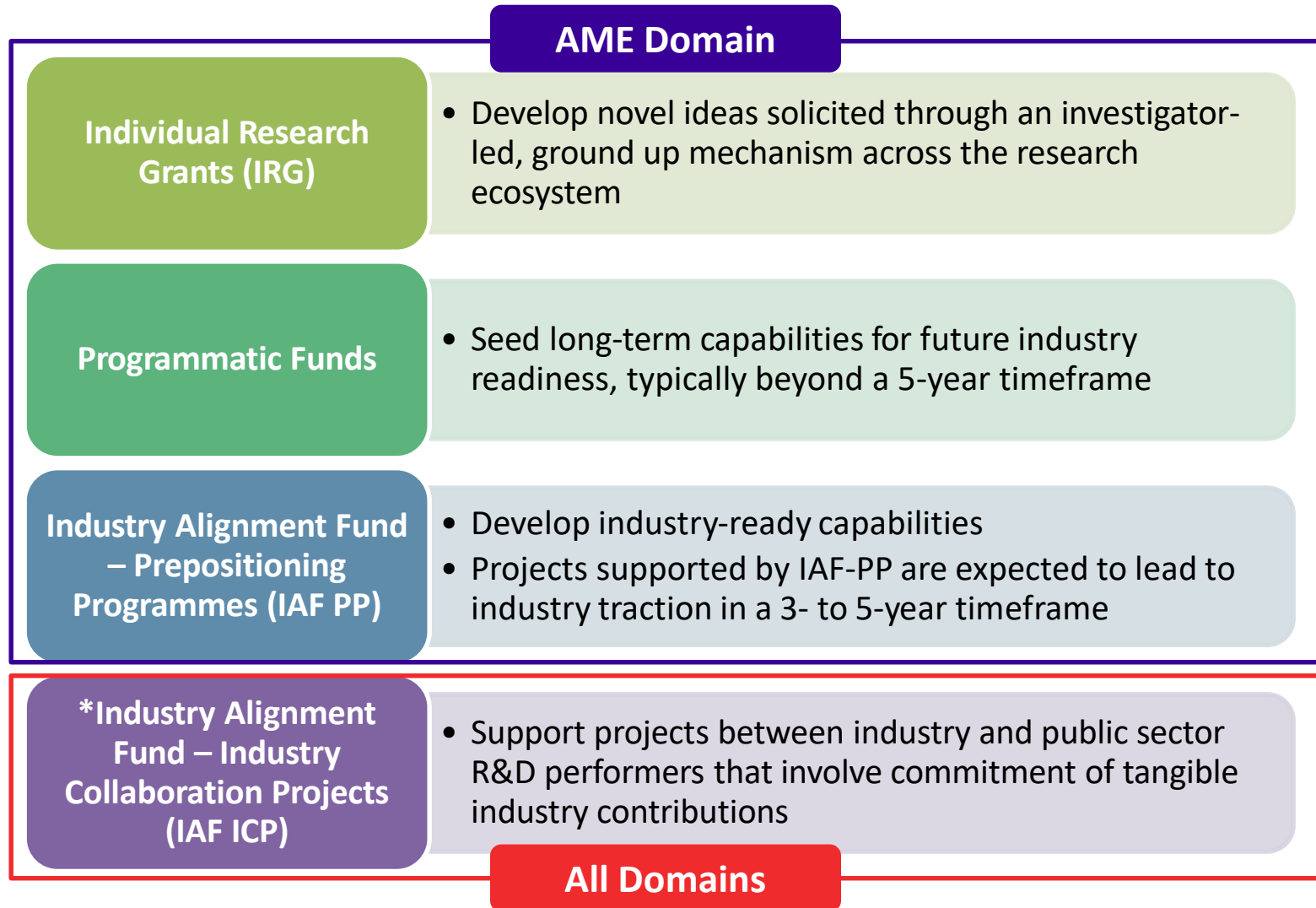
Value Creation Framework for Economic Outcomes



Note: MNC – Multinational Corporation; LLE – Large Local Enterprise; SME – Small and Medium Enterprise

Competitive Funding to Support AME Research

Open to public sector research performers



Summary

- Under RIE2020, Singapore government committing S\$19billion, 18% more than previous plan and at about 1% of GDP
- Four major shifts to **capture more value** from our investments and research
- Domain framework allows for a more **focused approach** to achieve strategic goals
- Manufacturing will continue to be an important pillar of Singapore's economy
- R&D and technology play key roles in **strengthening existing manufacturing sectors**, seeding new growth niches and boosting productivity
- More competitive funding will be available to support research aligned with AME strategy

Overview of AME IAF PP

Queries to be directed to:

iaf_pp_ame@hq.a-star.edu.sg

AME IAF-PP Overview

- To develop industry-ready capabilities towards deepening alignment of public sector research
- To develop multidisciplinary and integrated programmes with early industry involvement
- Supports new programmes, as well as existing programmes that have demonstrated strong track record of success and industry potential
- Programmes supported should be aligned with domains' themes and strategies

AME IAF-PP Governance

- **Strategic Oversight Committee (SOC*)**
 - Makes decisions on all IAF-PP policies and programmes
 - Comprises MD A*STAR, MD EDB and CEO NRF



- The RIE Strategy Committee has tasked A*STAR as the **Implementing Agency**, reporting to the IAF-PP SOC

Role of Implementing Agency includes

- *evaluation and scoping of proposals together with research performers and companies*
- *management of budget (e.g. fund disbursement, monitoring overall fund commitment and utilisation)*
- *tracking progress of endorsed proposals*

AME IAF-PP General Assessment Criteria

- Programmes supported by IAF-PP are expected to **lead to industry investments within 3-5 years**
- Key Criteria: **Potential for industry development and economic impact**
 - Alignment of programme to Domain strategic objectives and ability to deliver RIE2020 outcomes (Details can be found at <http://www.nrf.gov.sg/rie2020>)
 - Pre-positioning for **value creation** and **value capture** in Singapore
 - Potential to **attract corporate R&D spending and investments** (e.g. joint or corporate lab, co-development of project, creation of high quality jobs)
 - **Differentiation and competitiveness** at regional or global level

AME IAF-PP Application Process

- Announcements will be made periodically to inform or solicit proposals from the R&D community on key focus areas via:
 - A*STAR website (<https://www.a-star.edu.sg/Research/Funding-Opportunities/Grants-Sponsorship/IAF-PP.aspx>)
 - Thematic workshops and grant calls
 - Announcements through the Research Administration Office (or equivalent) of the institutes of higher learning, academic medical centres, hospitals and A*STAR research institutes
- Applications must be endorsed by the applying Host Institution(s) prior to submission
- All queries and applications must be submitted through A*STAR (as the Implementing agency) at iaf_pp_ame@hq.a-star.edu.sg

AME IAF-PP Proposal Evaluation Criteria

Catalytic

- The project is expected to lead to industry participation within 3 – 5 years
- The project will either contribute to the creation of new (niche) sectors or in existing sectors, bring about the attraction of new investments or transformation of existing base of activities.

Synergistic

- The project integrates strengths and capabilities across various publicly-funded research and tertiary institutions in Singapore.

Innovative

- The technological innovation in the project is sufficiently unique and it is differentiated from related projects in the region and globally.

Strategic Outcomes

- The project can either bring about economic impact, boost industry's innovation capacity or address national priorities.
- The project is in line with the overall sectorial development plan (e.g. ITMs).

AME IAF-PP Eligibility Criteria

- Programme director should:
 - Hold at least a 0.7 FTE primary appointment in a Singapore publicly funded research or tertiary institution;
 - Run a laboratory or research programme that carries out research in Singapore; and
 - Have a track record of leadership ability in coordinating research programmes, as well as achieving productive research outcomes.

AME IAF-PP Workflow

