

Machinery & Equipment Productivity Nexus

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Disahkan Oleh:

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Timbalan Pengarah

Machinery & Equipment Productivity Nexus

**Where we were
in 2020**

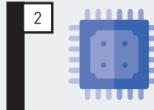
5 STRATEGIC THRUST

5 Key Strategic Thrusts under the Malaysia Productivity Blueprint



1 Building Workforce of the Future

Restructuring workforce by raising the number of high-skilled workers, tightening entry of low-skilled workers, and meeting demands of the future economy.



2 Driving Digitalisation and Innovation

Strengthening the readiness of enterprises to effectively adopt and exploit the technology and digital advantage (such as 4th Industrial Revolution).



3 Making Industry Accountable for Productivity

Reducing reliance on non-critical subsidies, linking financial assistance and liberalisation efforts to productivity outcomes, and strengthening industry positioning in higher value and segments of the value chain.



4 Forging a Robust Ecosystem

Addressing regulatory constraints and developing a robust accountability system to ensure effective implementation of regulatory reviews.



5 Securing a Strong Implementation Mechanism

Institutionalise a strong coordination and governance model to secure implementation certainty across government, sector, and enterprise levels.

Building Workforce

Digitalization

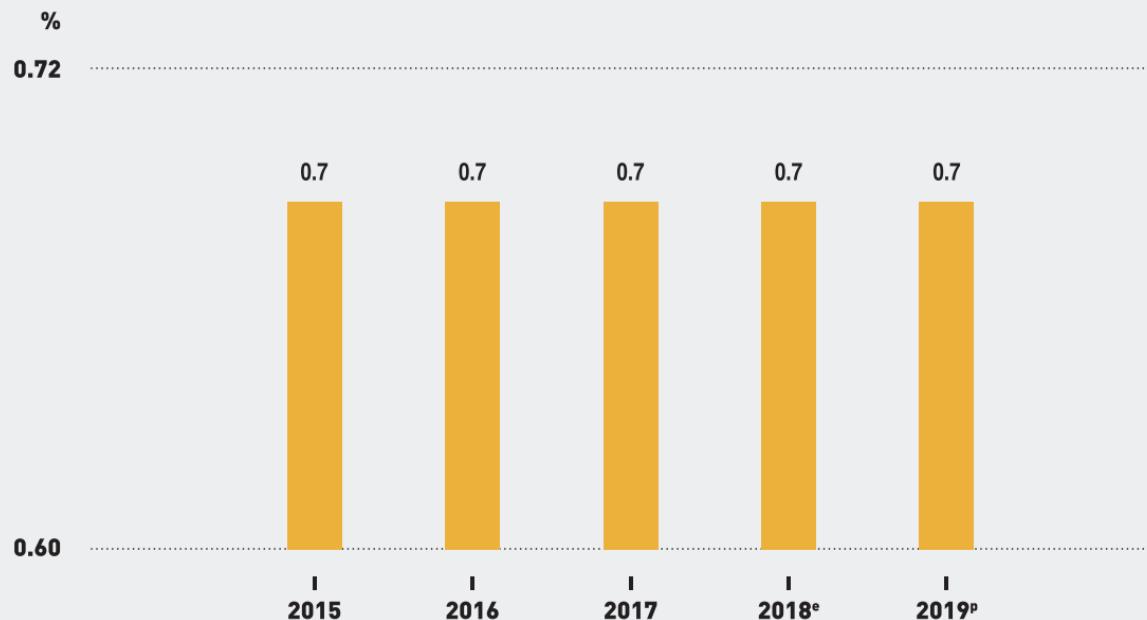
Industry Accountability

Robust Ecosystem

Strong Implementation

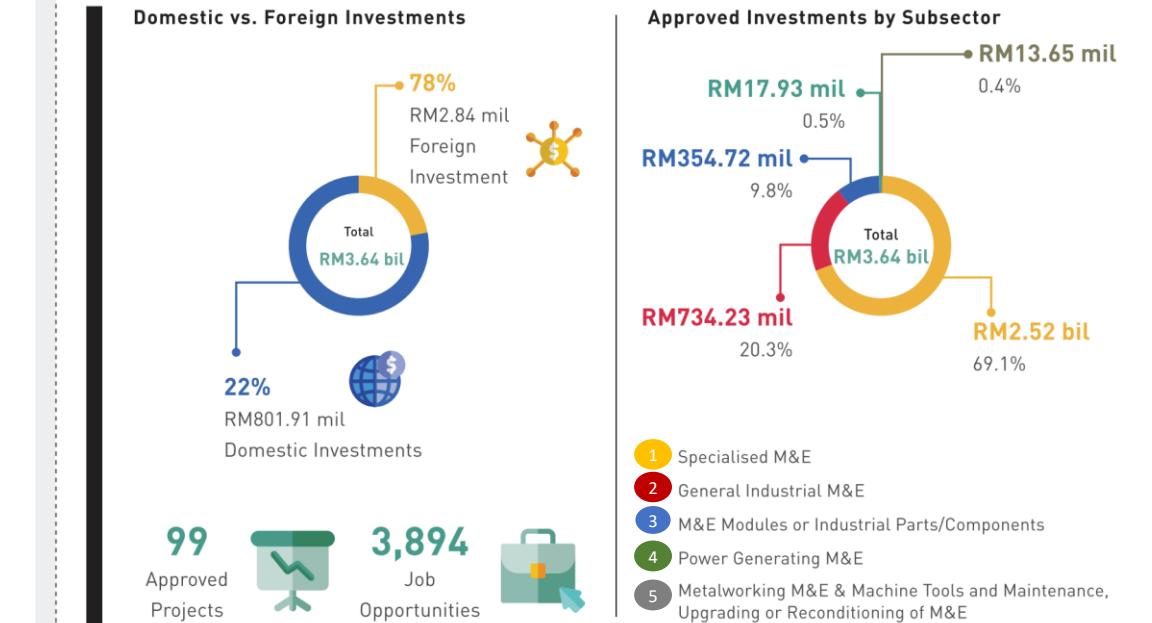
M&E SUBSECTOR ECONOMIC CONTRIBUTION

Machinery & Equipment Subsector Contribution to GDP 2015-2019



Source: Department of Statistics, Malaysia

Investments in Projects Approved in M&E Industry by Subsector for 2019



Source: Machinery & Equipment Productivity Nexus, MPC

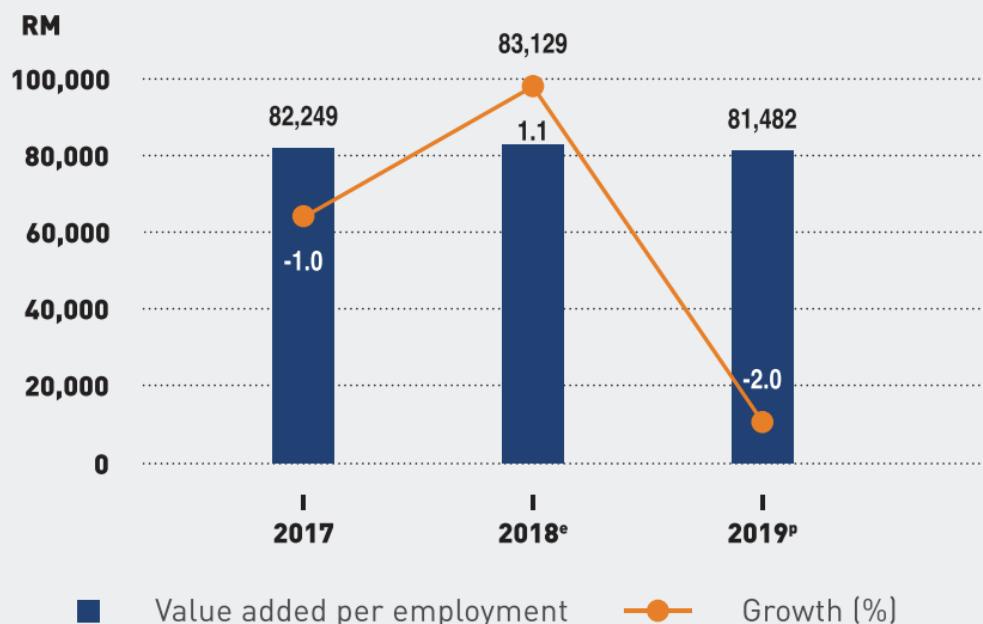
M&E PRODUCTIVITY PERFORMANCE

Machinery & Equipment Subsector Productivity Performance

Value Added Per Hour & Percentage Change



Value Added Per Employment & Percentage Change



Note : e – estimated

: p – preliminary

: Data is based on constant 2015 prices

Source: Department of Statistics, Malaysia

M&E PRODUCTIVITY INITIATIVES IN 2020

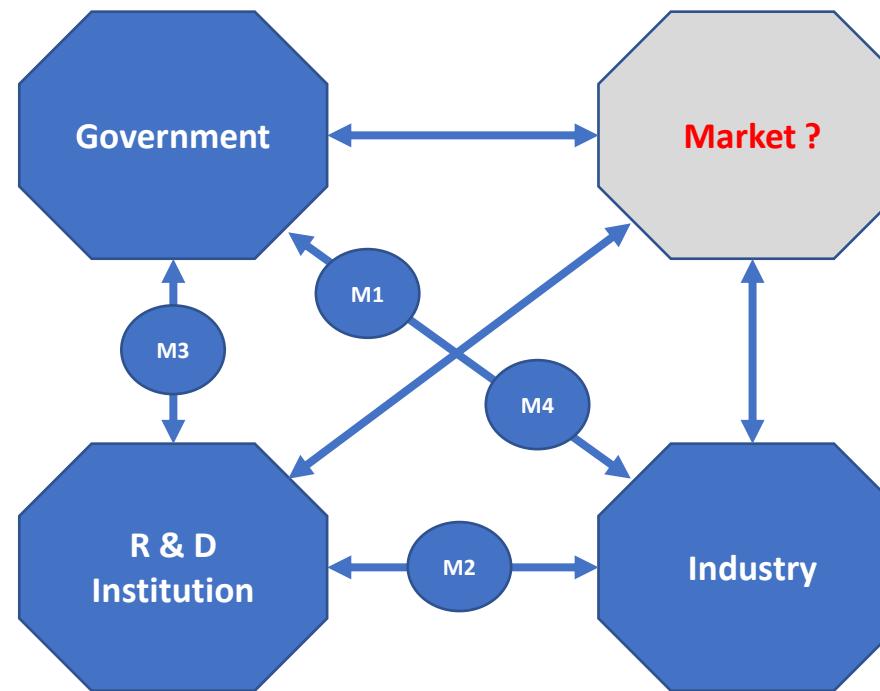
	<p>Initiative M1: Set up partnership between government and industry association to up-skill existing employees</p>
Business Concerns	<ul style="list-style-type: none">• Firms report constant vacancies for skilled production workers.• Brain drain of skilled Malaysians.• Graduates lack technical skills and require longer training time (+6 months)• Mismatch between curriculum and industry needs leading to higher training cost.
Programmes	<p>Facilitated a number of initiatives that involved TVET educational institutions, industry stakeholders and training, to improve overall skill levels of industry talent.</p>

	<p>Initiative M2: Set up centres of excellence (COE) for skilled professionals to share industry expertise and develop new technologies</p>
Business Concerns	<ul style="list-style-type: none">• Heavy reliance on low-skilled labour, limiting ability to adopt technology and automation• MNCs rarely source their inputs from domestic firms due to quality of local manufacturers and lack of product availability.
Programmes	<p>Establishment of M&E's COEs and COE Framework Report</p> <p>Productivity Enhancement Programme using self-diagnosis productivity measurement tools (ezBE and ePGM)</p>

	<p>Initiative M3: Set up more product testing facilities to ensure standards are met</p>
Business Concerns	<ul style="list-style-type: none">• Current standards for local and imported products are lower than international standards for export products leading to lower investment on quality assurance and improvements.
Programme	<p>Review Report on Industry Standards and Regulations</p>
	<p>Initiative M4: Update domestic product standards to be on par with international standards and enforce compliance</p>
Business Concern	<ul style="list-style-type: none">• Current standards for local and imported products are lower than international standards for export products leading to lower investment on quality assurance and improvements.
Programmes	<p>Development of M&E Repository with 500 M&E and Engineering Supporting Services (ESS) high potential companies in the database</p> <p>Publication of Malaysian System Integrators Directory</p> <p>Streamlining process through Reduced Unnecessary Regulatory Burdens (RURB)</p> <ul style="list-style-type: none">- Examples include:> Temporary Import Permit for Mobile Crane> Safety Passport Issued by Regulators> Certificate of Approval for Imported Steel Products
	<p>Impact to Sector</p> <ul style="list-style-type: none">• Easy access to the right information about M&E and Engineering Services providers.• Helps Malaysian SMEs to find the right partners for Industry 4.0 implementation.• Ease of doing business for industry players due to the improvement in regulations.

M&E INITIATIVES SIGNIFICANCE

M1	Set up partnership between government and industry association to up-skill existing employees
M2	Set up centers of excellence (COE) for skilled professional to share industry expertise and develop new technologies
M3	Set up more product testing facilities to ensure standards are met
M4	Update domestic product standards to be on par with international standards and enforce compliance



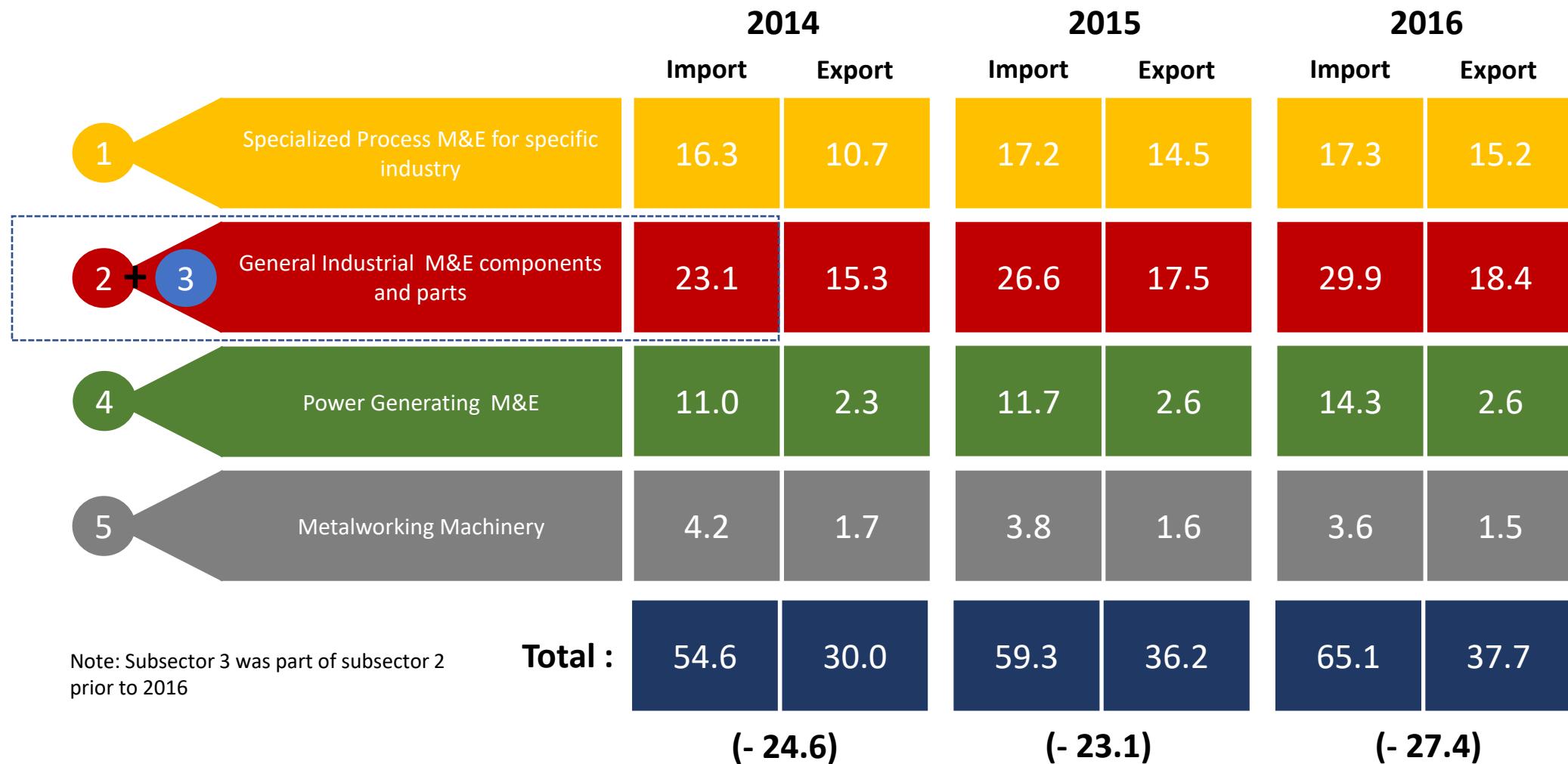
OBSERVATIONS

- 1. Efforts were made previously to improve productivity in the Machinery & Equipment Nexus.**
- 2. There were some gaps in the effort, and a review is timely to explore ways to improve productivity in this subsector.**
- 3. This paper is an attempt to improve past efforts and drive further the productivity with the Machinery & Equipment subsector.**

Machinery & Equipment Productivity Nexus

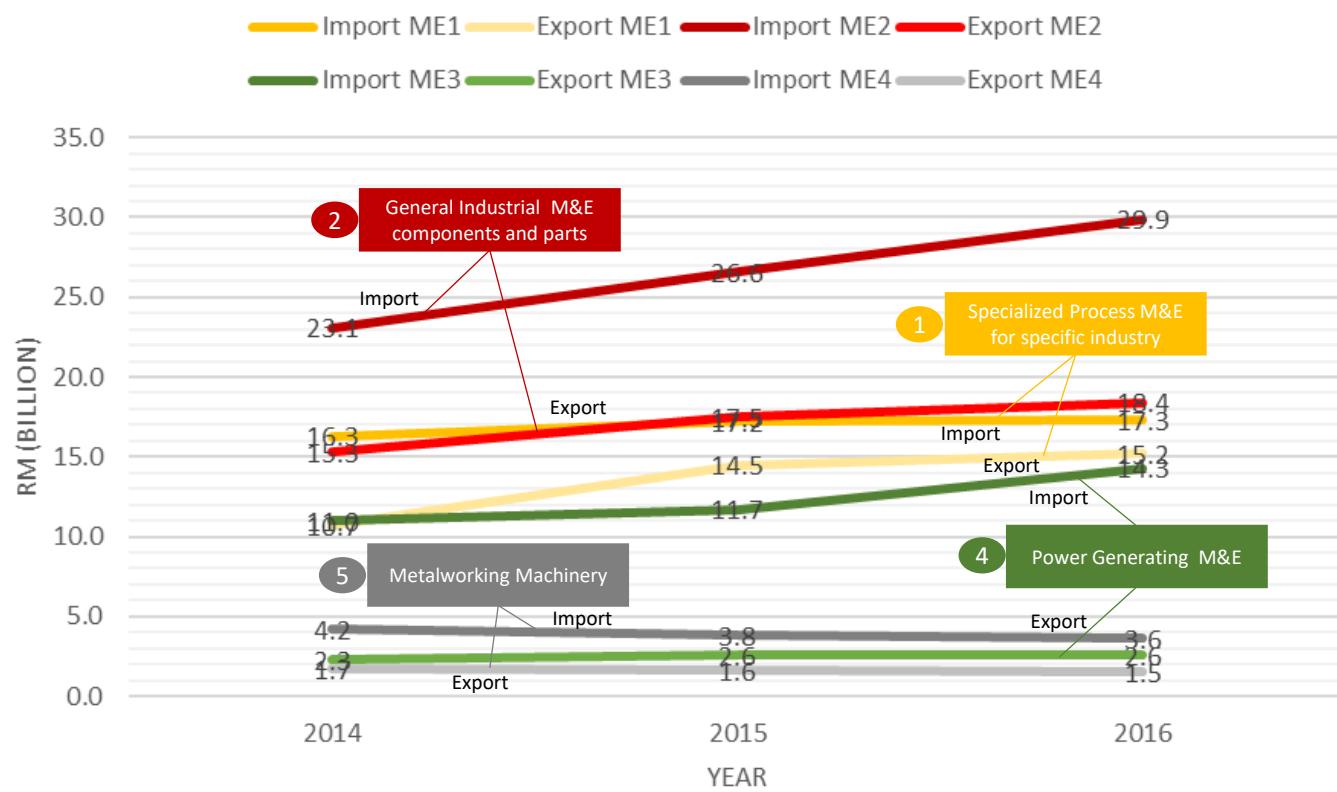
**Which subsector should we
prioritized for productivity
improvement?**

THE MACHINERY & EQUIPMENT INDUSTRY



THE MACHINERY & EQUIPMENT INDUSTRY

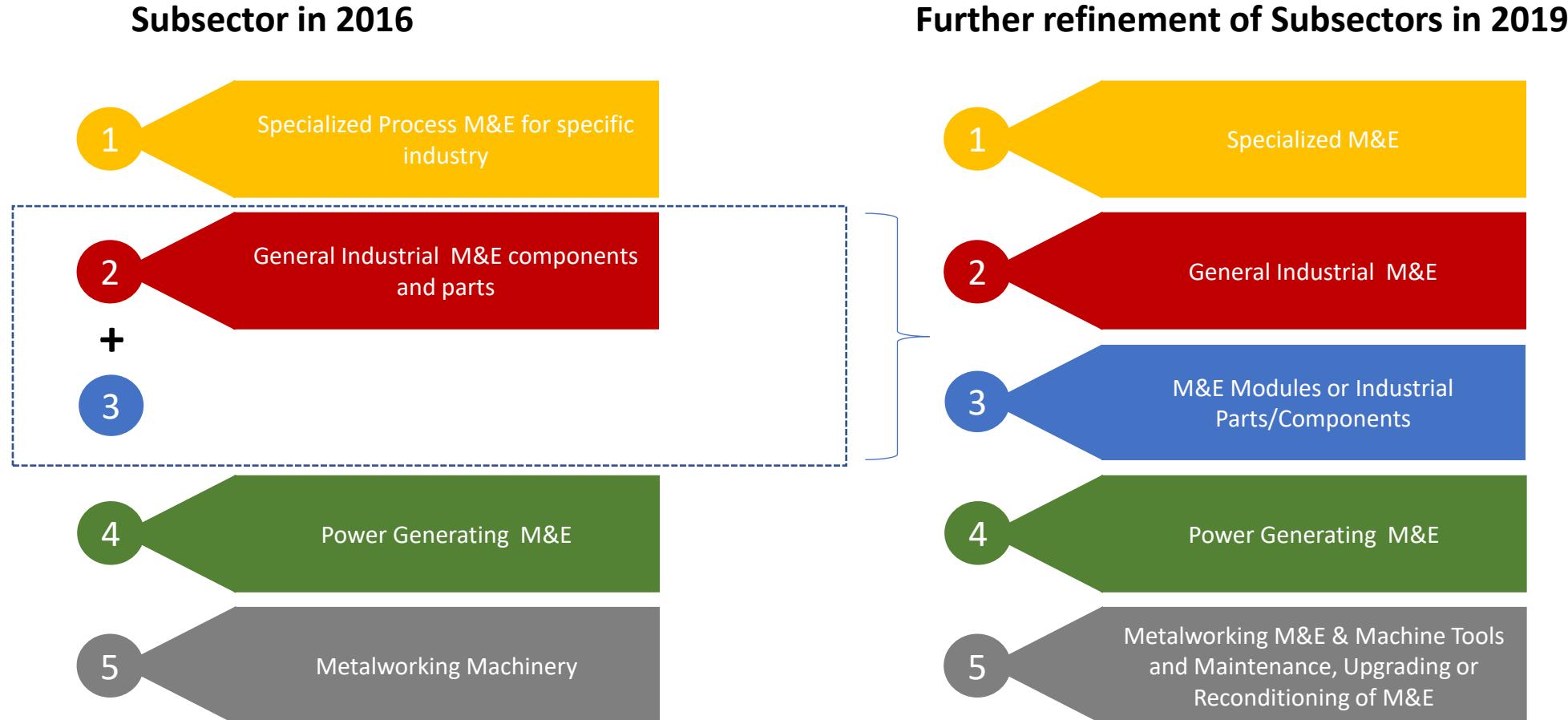
Machinery & Equipment Trade



“In general, we Import more than we Export , thus the overall Machinery & Equipment Trade deficit has been growing Y-O-Y.”

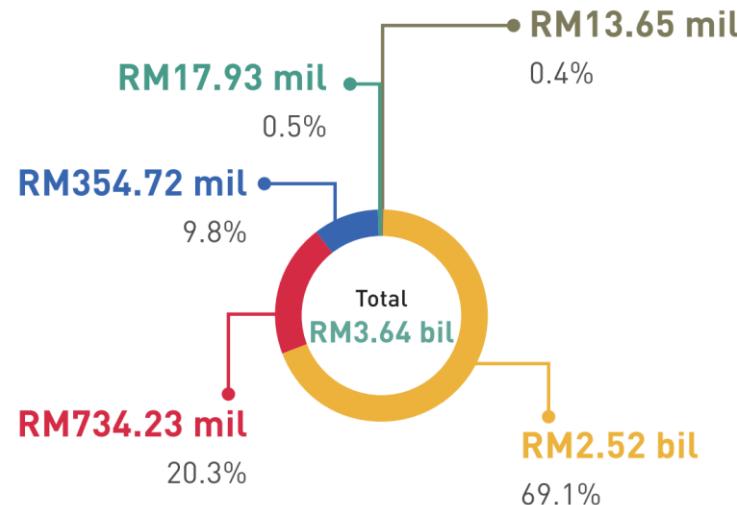
Although, General Industrial M&E has the largest trade, the **Specialized Process M&E holds best growth potential.**

THE MACHINERY & EQUIPMENT INDUSTRY



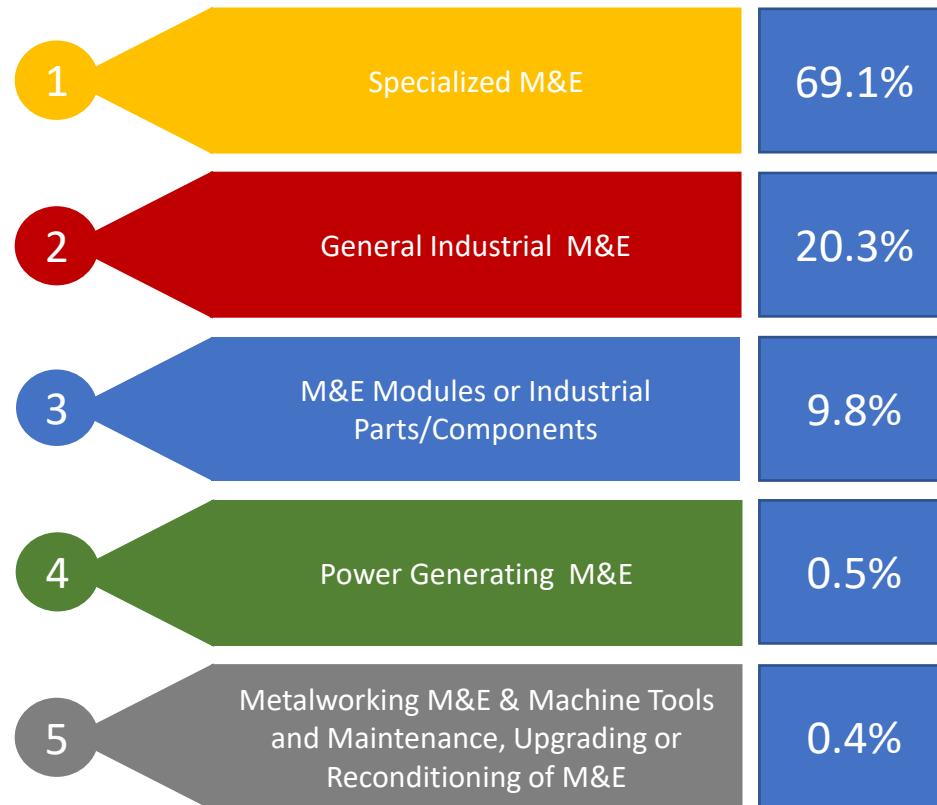
THE MACHINERY & EQUIPMENT INDUSTRY

Approved Investments by Subsector



- Specialised M&E
- General Industrial M&E
- M&E Modules or Industrial Parts/Components
- Power Generating M&E
- Metalworking M&E & Machine Tools and Maintenance, Upgrading or Reconditioning of M&E

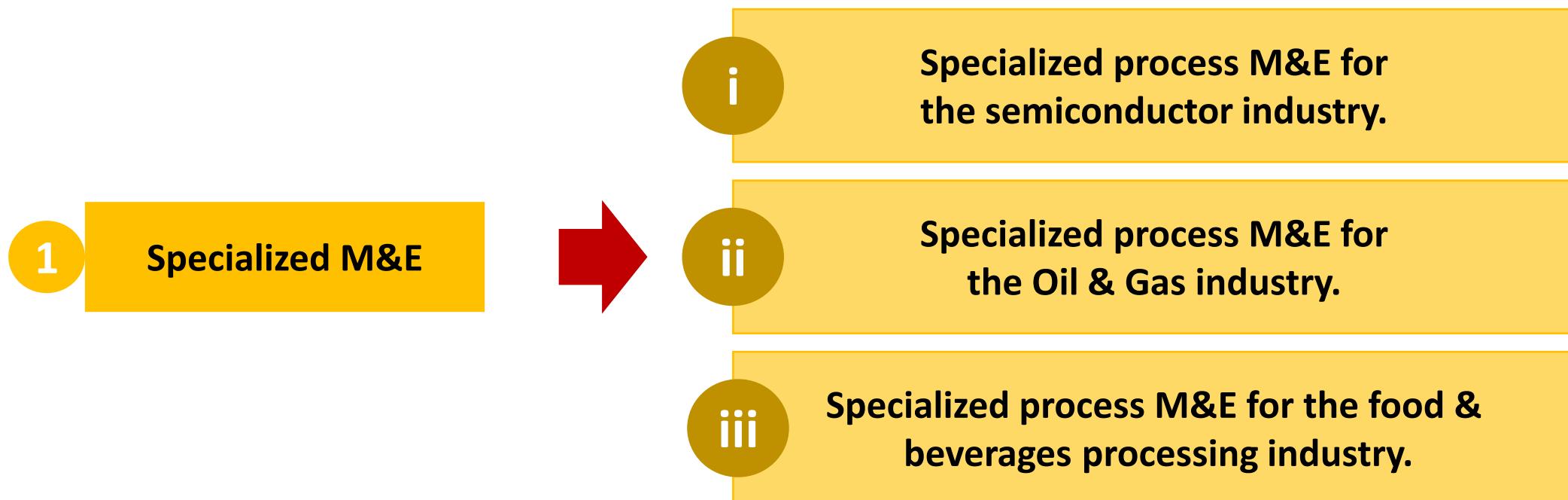
Approved Investment by Subsector in 2019



Specialized M&E shows largest investment segment

THE MACHINERY & EQUIPMENT INDUSTRY

The Specialized M&E Subsector can be further divided into three (3) main categories:



THE MACHINERY & EQUIPMENT INDUSTRY



improve productivity in
any of these sectors?

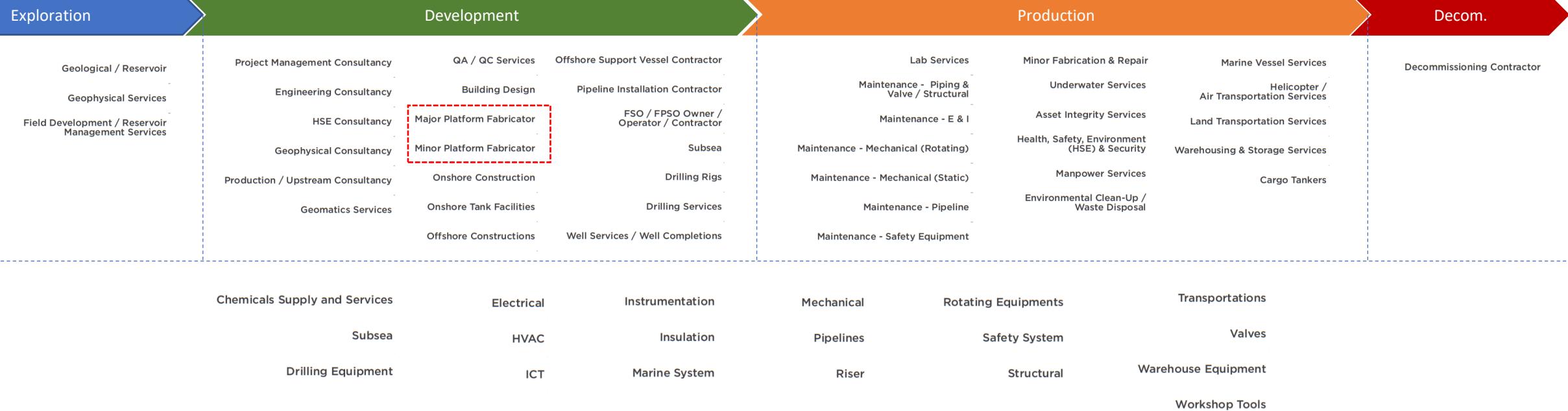
Let's consider subsector ii

SPECIALIZED PROCESS M&E FOR THE OIL & GAS INDUSTRY.

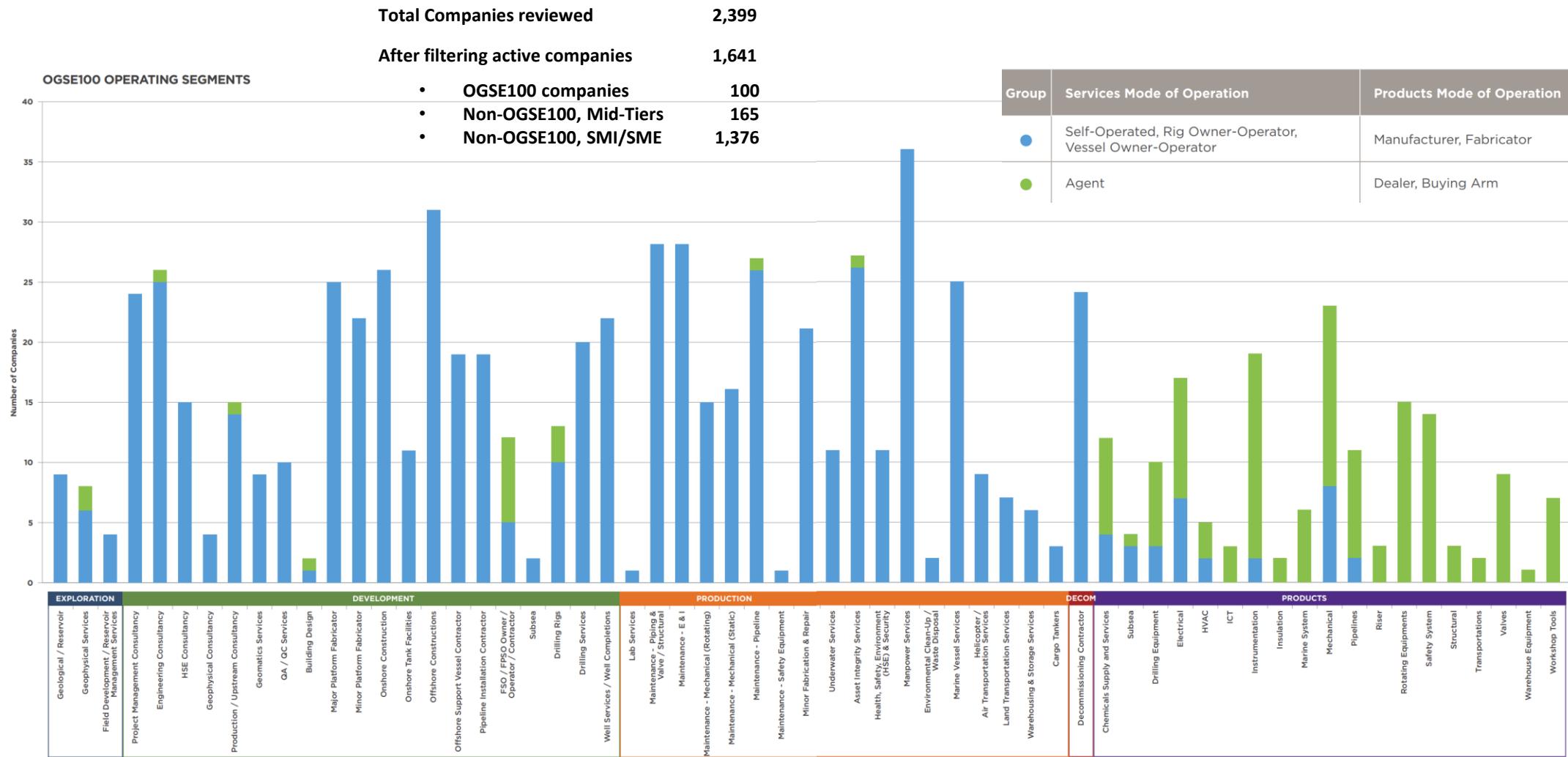


Upstream Oil & Gas Value Chain

Services



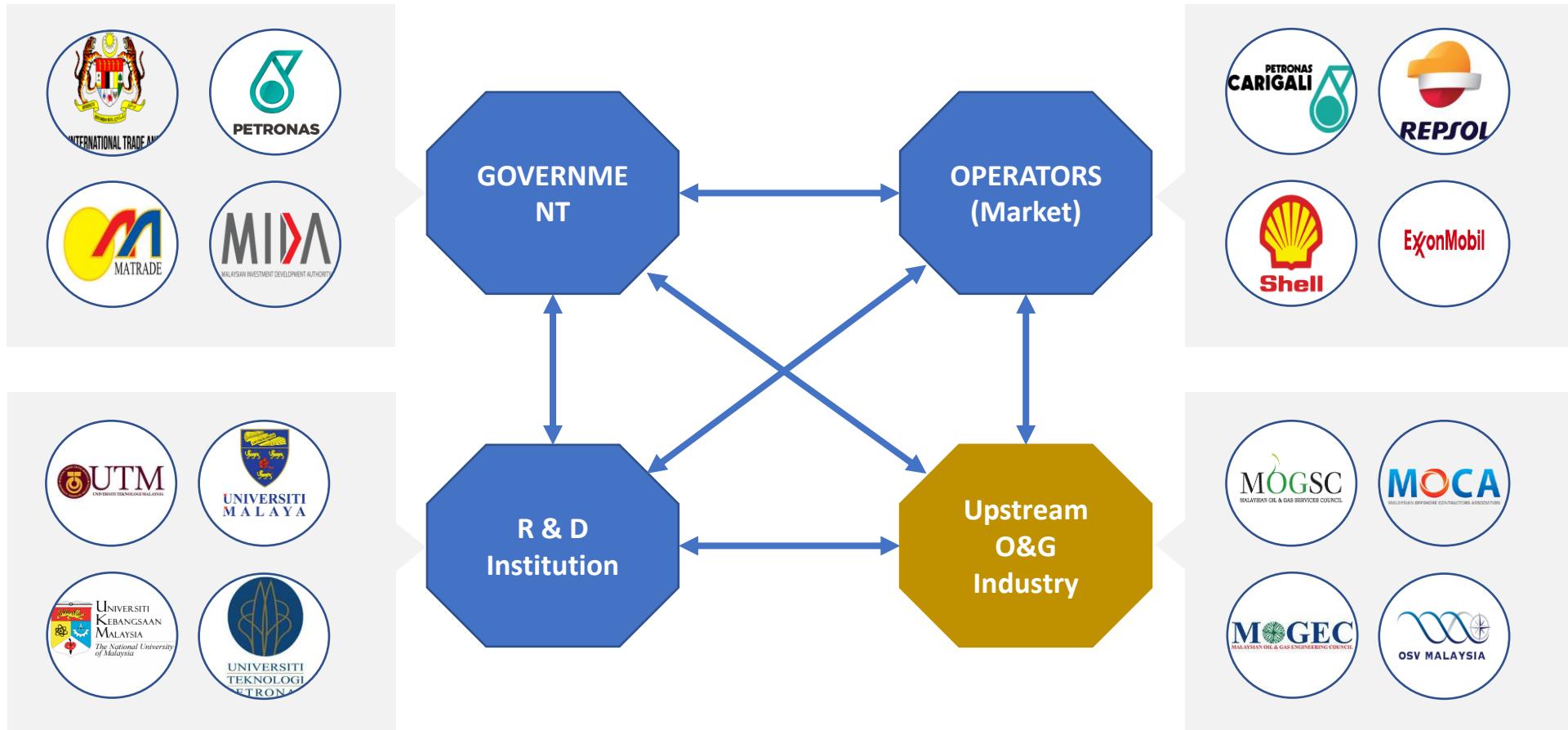
SPECIALIZED PROCESS M&E FOR THE OIL & GAS INDUSTRY.



Source PETRONAS 2018 (From MPRC100 doc.)

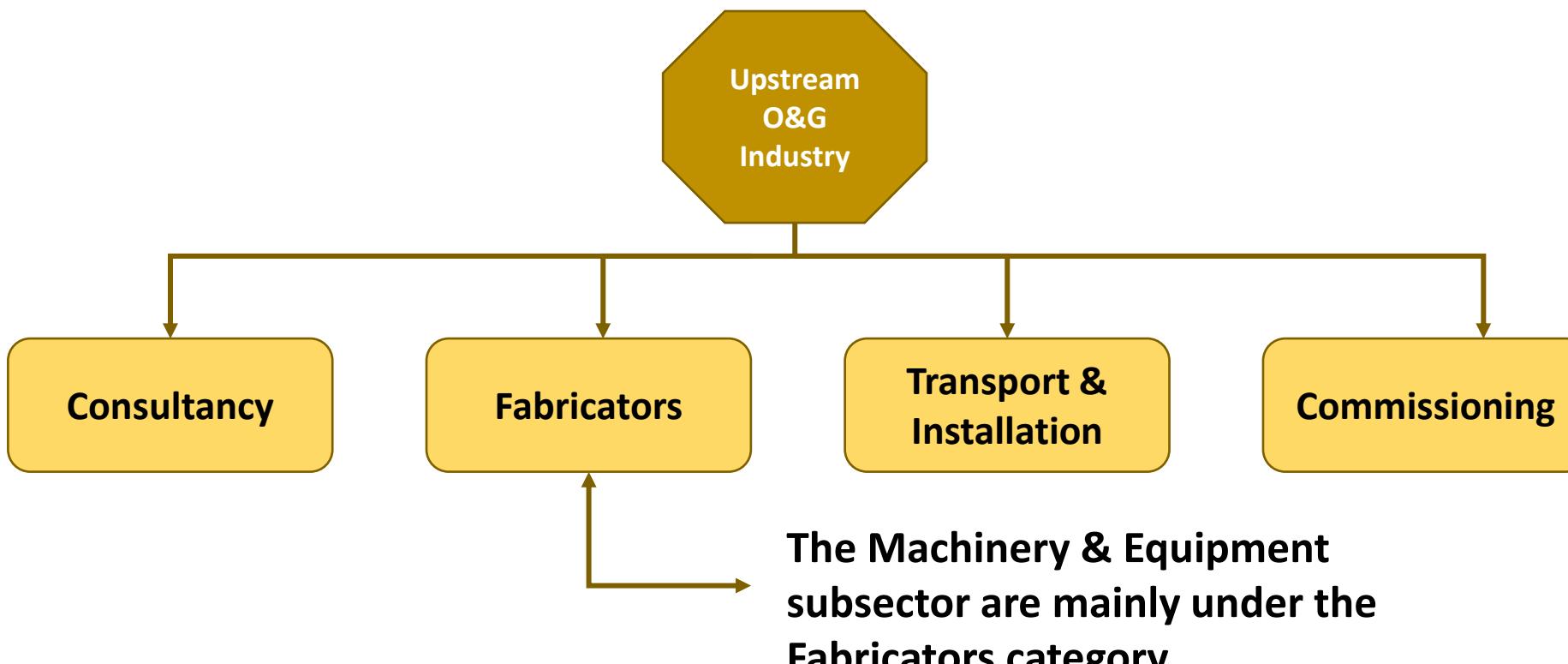
SPECIALIZED PROCESS M&E FOR THE OIL & GAS INDUSTRY.

Quadruple-Helix Model for the Upstream Oil & Gas Industry :

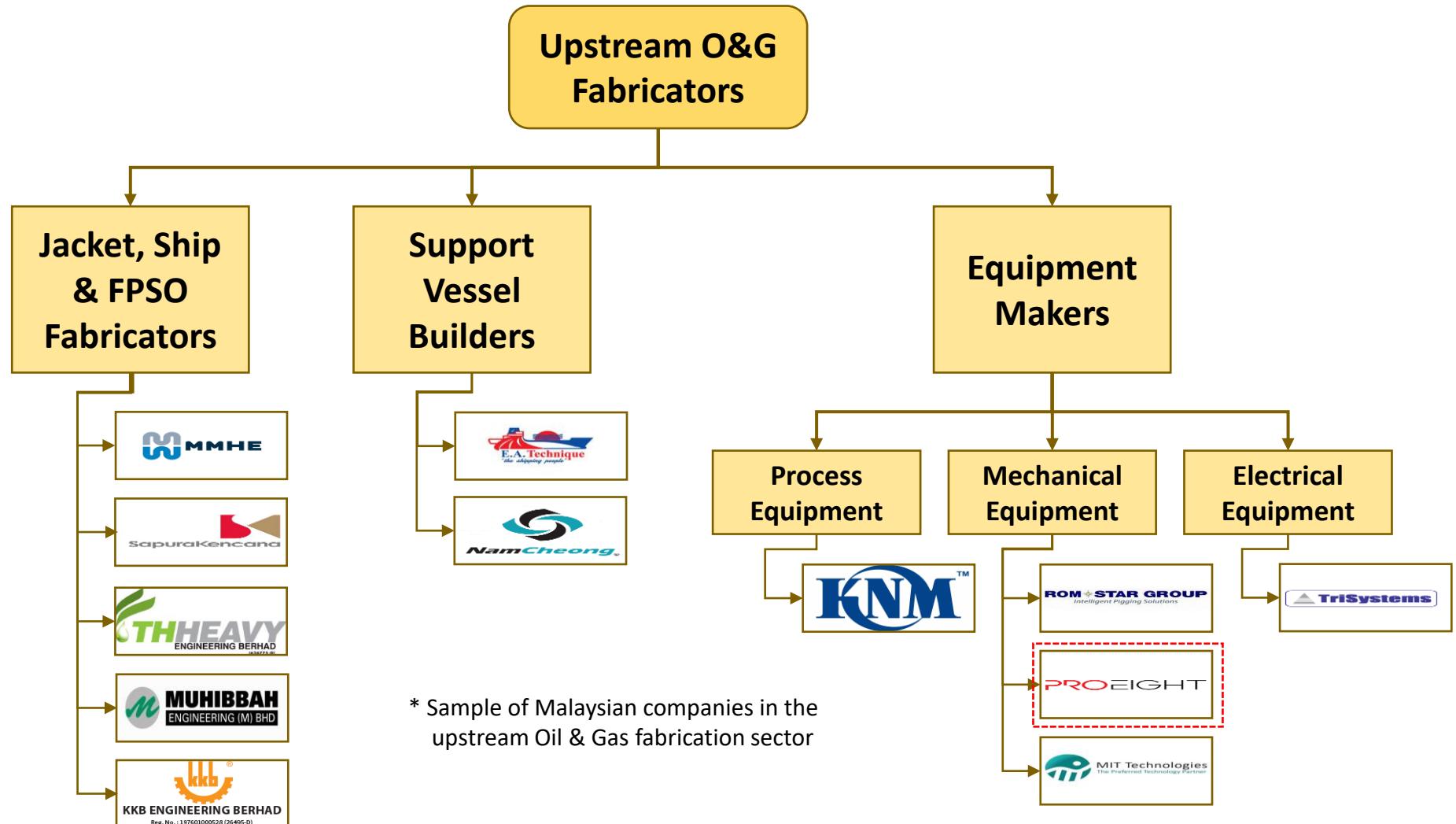


SPECIALIZED PROCESS M&E FOR THE OIL & GAS INDUSTRY.

The Upstream Oil & Gas Industry can be categorized broadly into these main subsectors :



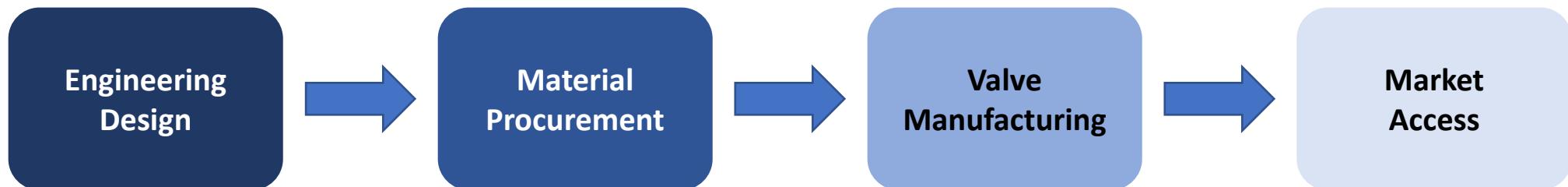
SPECIALIZED PROCESS M&E FOR THE OIL & GAS INDUSTRY.



SPECIALIZED PROCESS M&E FOR THE OIL & GAS INDUSTRY.

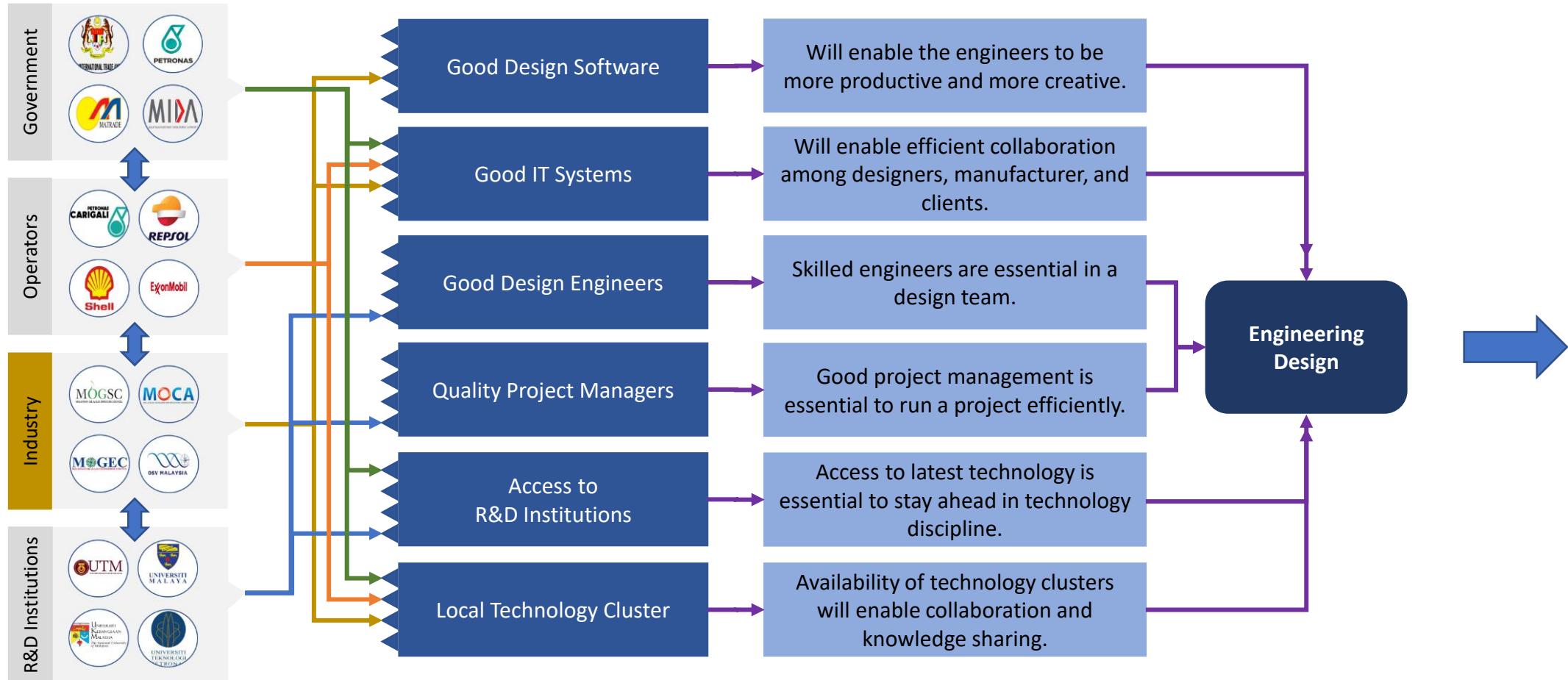
Case Study 1 : PROEIGHT is into the design and manufacture of valves.
How do you improve it's productivity?

Let's start by looking at it's value chain!



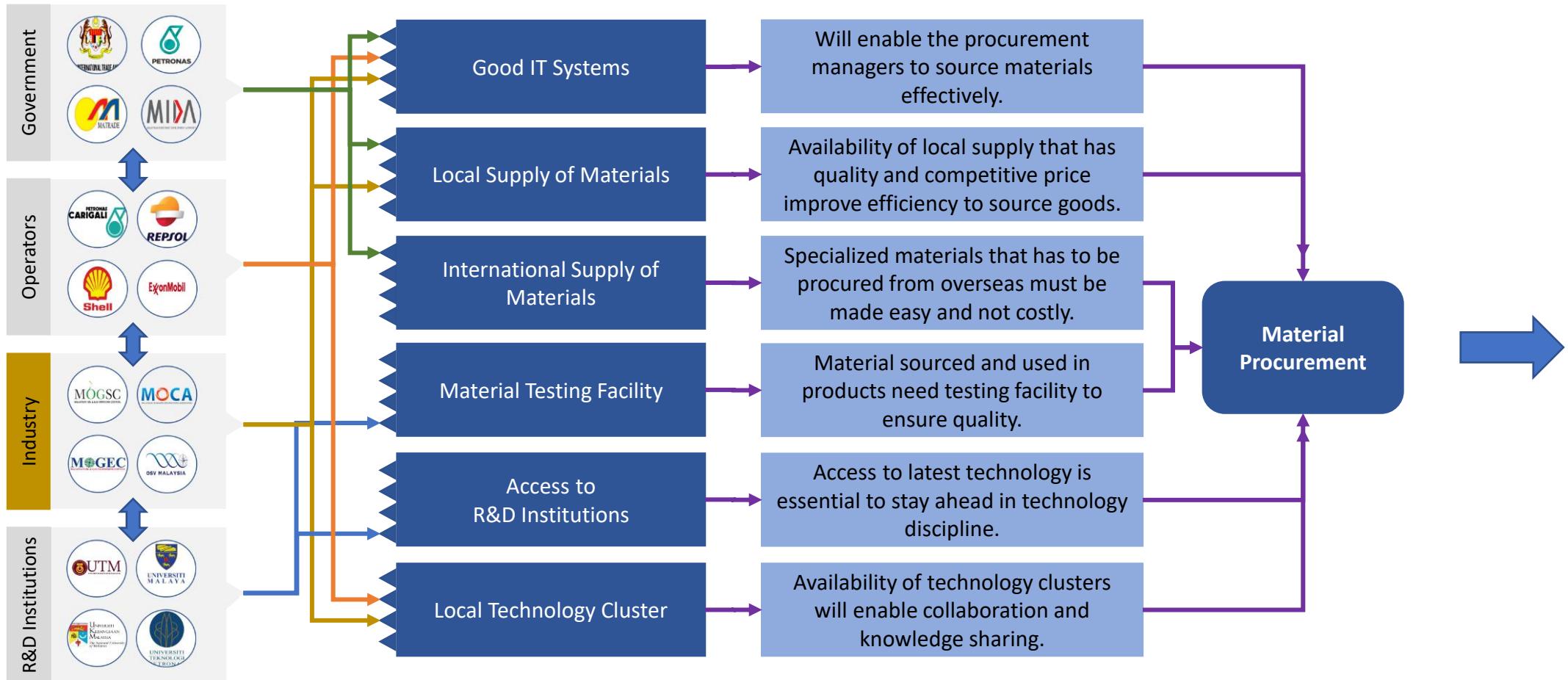
SPECIALIZED PROCESS M&E FOR THE OIL & GAS INDUSTRY.

Improving Engineering Design Productivity :



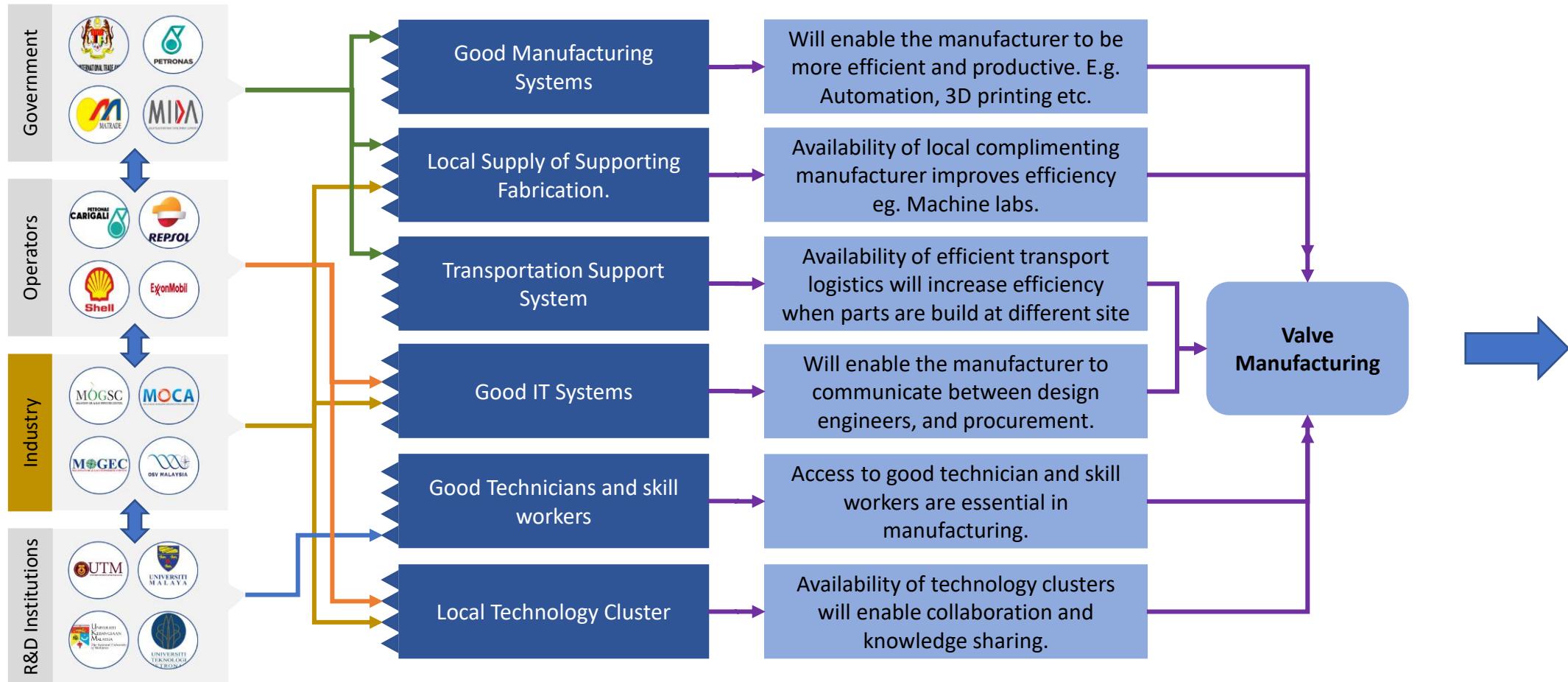
SPECIALIZED PROCESS M&E FOR THE OIL & GAS INDUSTRY.

Improving Material Procurement Productivity :



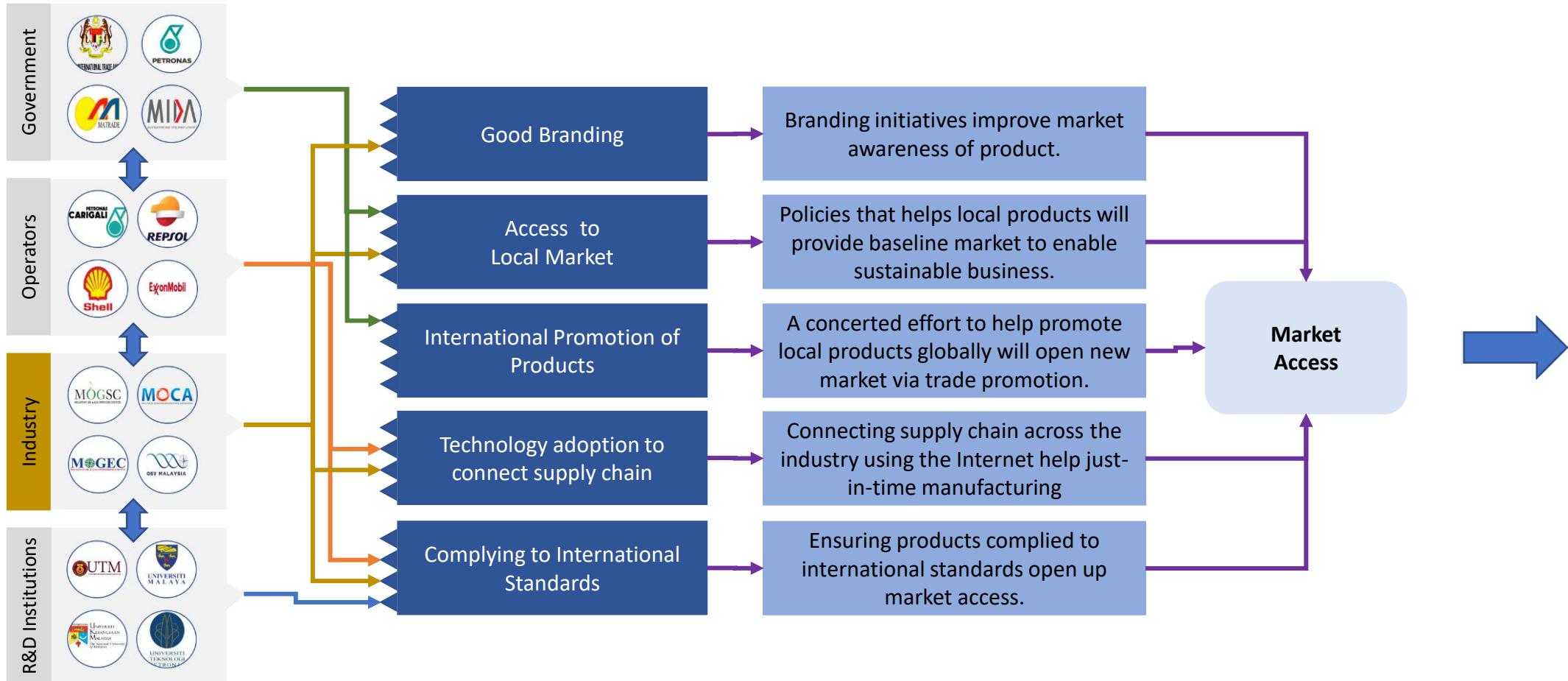
SPECIALIZED PROCESS M&E FOR THE OIL & GAS INDUSTRY.

Improving Manufacturing Productivity :



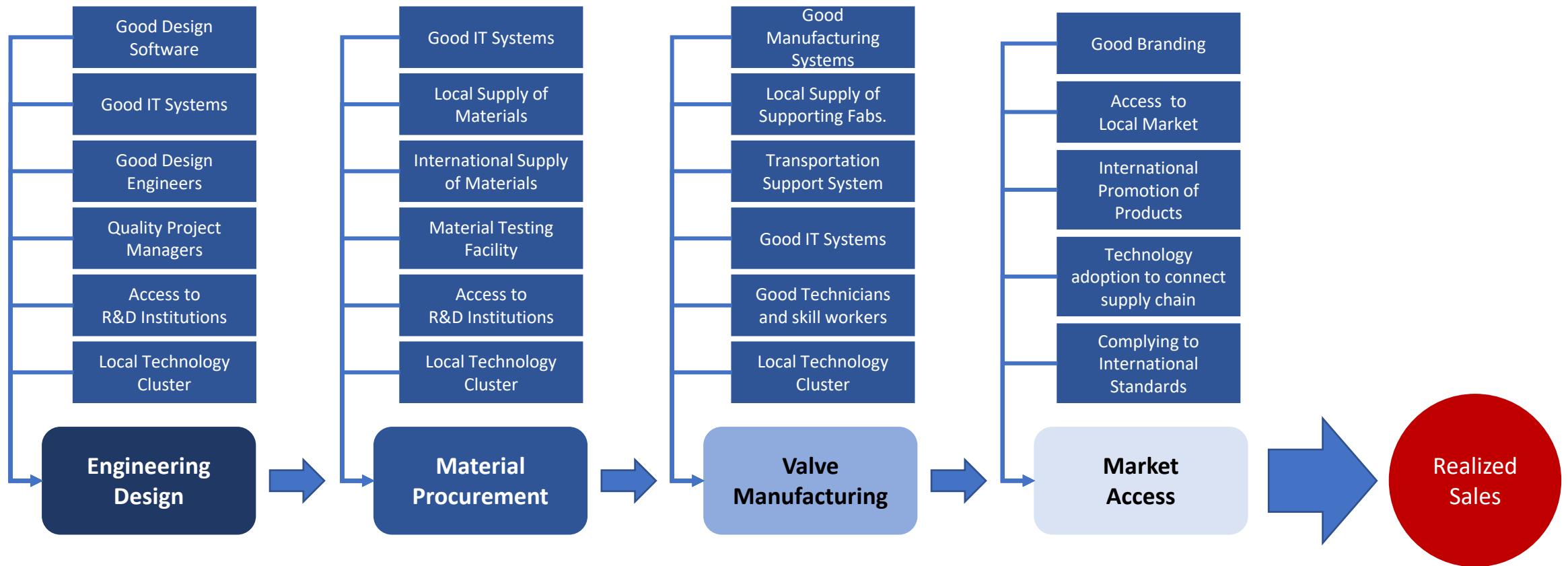
SPECIALIZED PROCESS M&E FOR THE OIL & GAS INDUSTRY.

Improving Market Access Productivity :

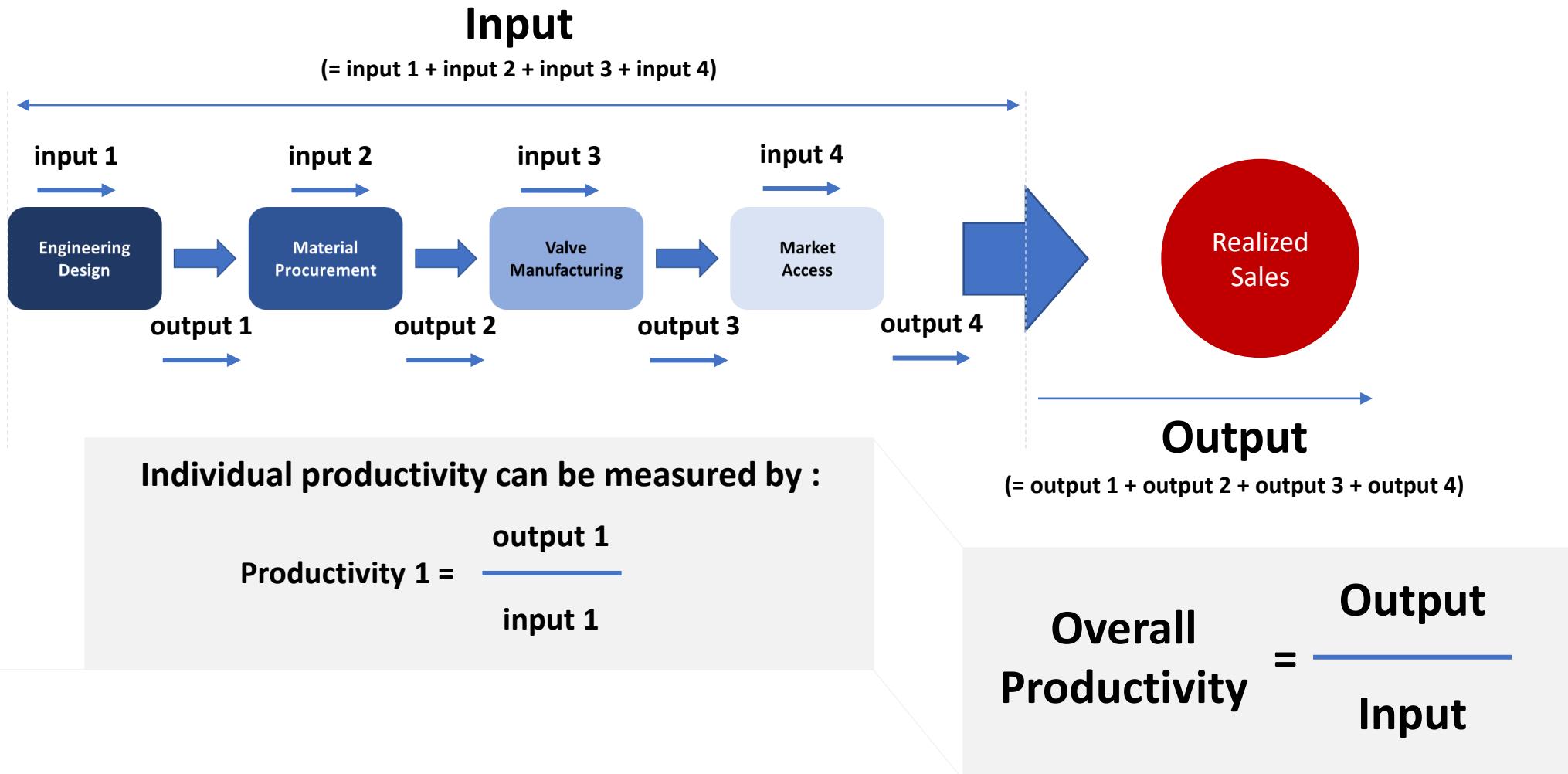


SPECIALIZED PROCESS M&E FOR THE OIL & GAS INDUSTRY.

Factors along the value chain that can improve Productivity :



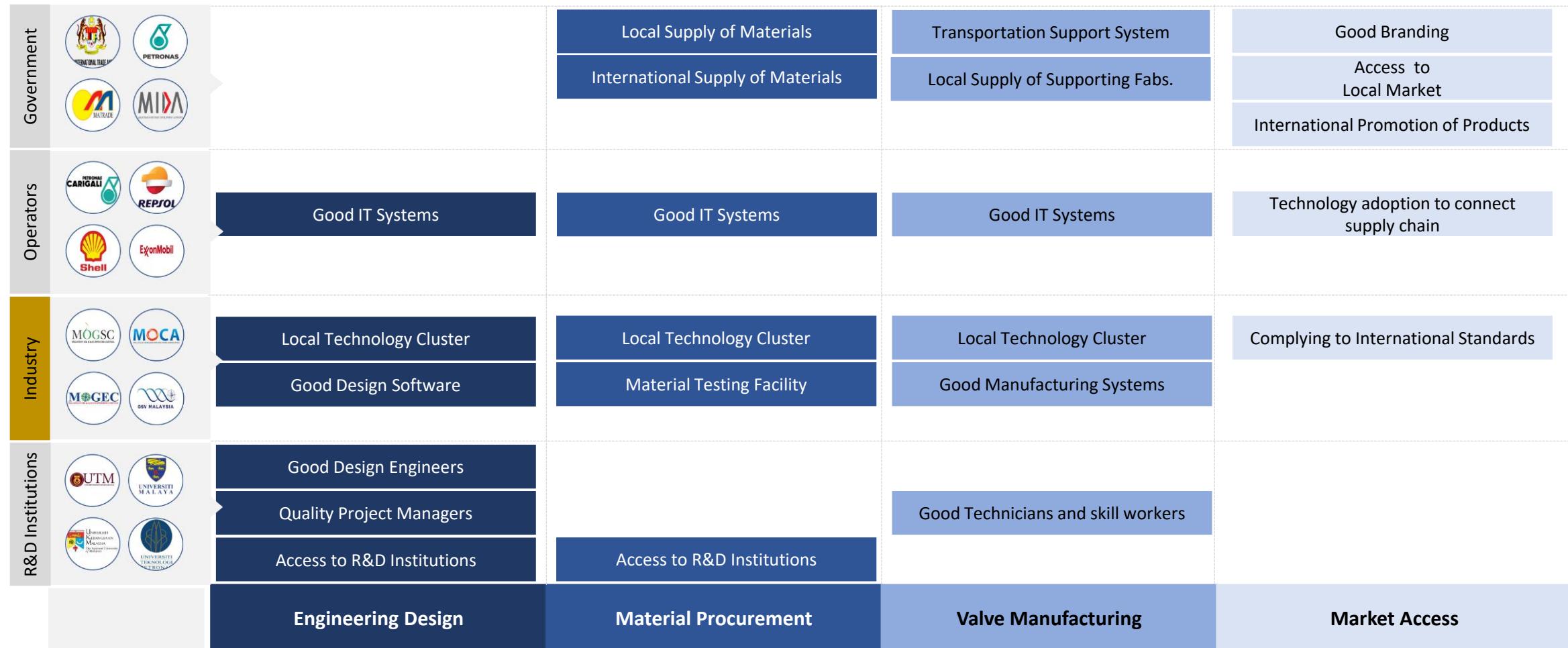
SPECIALIZED PROCESS M&E FOR THE OIL & GAS INDUSTRY.



Machinery & Equipment Productivity Nexus

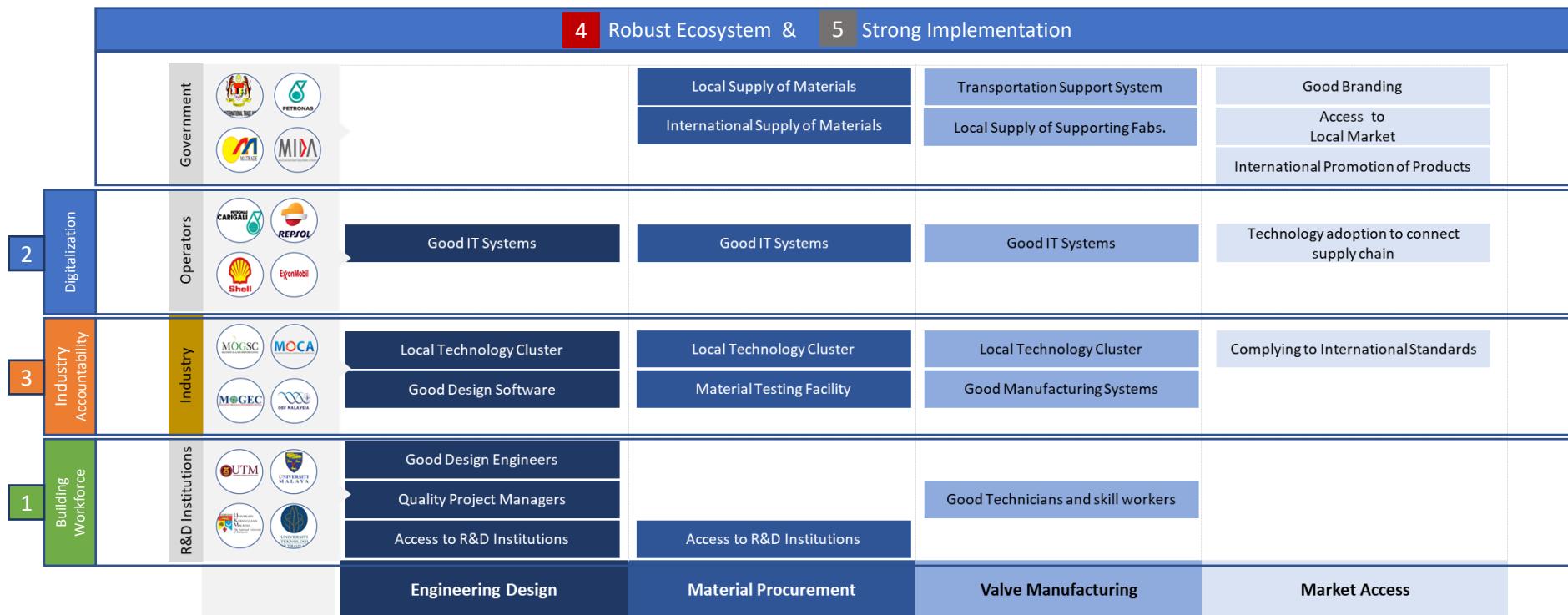
**Some ideas to
move forward –
future initiatives**

SPECIALIZED PROCESS M&E FOR THE OIL & GAS INDUSTRY.



SPECIALIZED PROCESS M&E FOR THE OIL & GAS INDUSTRY.

Industry initiatives along the five (5) strategic thrust under the Malaysia Productivity Blueprint:



THE MACHINERY & EQUIPMENT INDUSTRY



... craft initiatives &
aligned with
Strategic Thrust !

SPECIALIZED PROCESS M&E FOR THE OIL & GAS INDUSTRY.

Strategic Thrust		Initiatives		
1	Building Workforce	1 Good Supply of Technicians & Skill Workers	2 Good Supply of Engineers and Project Managers	3 Thriving R&D Cluster
2	Digitalization	4 To create an comprehensive IT network across industry to facilitate design, procurement, manufacture, and market access.		
3	Industry Accountability	5 To have a dynamic technology clusters in software development, materials technology, good manufacturing practices, that would enable industry to satisfy international standards		
4	Robust Ecosystem	6 Good Access to Material Supply	7 Good Logistic and Transportation Services	8 Local Market Access & International Promotion
5	Strong Implementation	9 A special task force to ensure all the above initiatives are implemented		

SPECIALIZED PROCESS M&E FOR THE OIL & GAS INDUSTRY.

New initiatives compliments to complete previous efforts :

Proposed nine (9) new initiatives :

Strategic Thrust	Initiatives		
1 Building Workforce	1 Good Supply of Technicians & Skill Workers	2 Good Supply of Engineers and Project Managers	3 Thriving R&D Cluster
2 Digitalization	4 To create an comprehensive IT network across industry to facilitate design, procurement, manufacture, and market access.		
3 Industry Accountability	5 M2	To have a dynamic technology clusters in software development, materials technology, good manufacturing practices, that would enable industry to satisfy international standards	
4 Robust Ecosystem	6 Good Access to Material Supply	7 Good Logistic and Transportation Services	8 Local Market Access & International Promotion
5 Strong Implementation	9 M1	A special task force to ensure all the above initiatives are implemented	

2020 initiatives to drive productivity in MEPN :

M1	Set up partnership between government and industry association to up-skill existing employees
M2	Set up centers of excellence (COE) for skilled professional to share industry expertise and develop new technologies
M3	Set up more product testing facilities to ensure standards are met
M4	Update domestic product standards to be on par with international standards and enforce compliance

Machinery & Equipment Productivity Nexus

Implementation Mechanism

SPECIALIZED PROCESS M&E FOR THE OIL & GAS INDUSTRY.

The Nine (9) New Proposed Initiatives :

1	Good Supply of Technicians & Skill Workers
2	Good Supply of Engineers and Project Managers
3	Thriving R&D Cluster
4	To create an comprehensive IT network across industry to facilitate design, procurement, manufacture, and market access.
5	To have a dynamic technology clusters in software development, materials technology, good manufacturing practices, that would enable industry to satisfy international standards
6	Good Access to Material Supply
7	Good Logistic and Transportation Services
8	Local Market Access & International Promotion
9	A special task force to ensure all the above initiatives are implemented

Need to Define :



Machinery & Equipment Productivity Nexus

Summary

SPECIALIZED PROCESS M&E FOR THE OIL & GAS INDUSTRY.

- 1. Past effort in the Machinery & Equipment Productivity Nexus was reviewed. This was then put in the context of the country's trade to identify significant subsector to focus on.**
- 2. The specialized process Machinery & Equipment for the Oil & Gas industry was selected as a case study. Detailed value chain was reviewed, and placed within the Malaysian Productivity Blueprint Strategic Thrust framework.**
- 3. Nine new initiatives are proposed. These nine new initiatives covers the main parameters within the value-chain that have direct impact to the industry productivity.**
- 4. The implementation of these would require further efforts involving stakeholders syndication and buy-in.**

Thank You

DSM

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TBC