BOM

Embassy of the Kingdom of the Netherlands

Netherlands Enterprise Agency

BCI Global

# Sector Study

## Opportunities in the Malaysian MedTech Sector for Dutch Advanced Manufacturing

Nijmegen, June 2025

# Executive Summary

# Executive summary

This report, commissioned by the Embassy of the Kingdom of the Netherlands and the Netherlands Enterprise Agency (RVO), explores strategic opportunities for Dutch advanced manufacturing and systems engineering firms in Malaysia's dynamic MedTech sector. It aims to foster bilateral collaboration in the high-tech advanced manufacturing and healthcare domains.

Malaysia is ASEAN's largest MedTech market and a regional manufacturing hub, home to over 300 multinational and local MedTech firms. The sector benefits from a strong industrial base, government-backed infrastructure, and a young, urbanized, and increasingly skilled workforce. With over 90% of medical devices produced locally being exported globally, Malaysia has developed robust mid-stream capabilities—particularly in component manufacturing, assembly, sterilization, and packaging. However, the country is now actively shifting towards higher value-added activities, including R&D, product development, and digital innovation.

In this context, Dutch companies—renowned for excellence in mechatronics, precision engineering, additive manufacturing, and integrated system design—are well-positioned to contribute to Malaysia's ambition of evolving into a full-spectrum MedTech innovation hub.

# Malaysia's MedTech Sector

## Strategic overview

- Malaysia is Southeast Asia's largest medical device market and manufacturing hub, hosting over 300 MedTech companies and contributing to more than 90% of the region's exports in medical devices. The country has moved beyond its traditional strength in consumables (e.g., rubber gloves) into higher-value products such as diagnostic imaging systems, surgical instruments, and implantable devices.

- The country offers a robust industrial ecosystem supported by skilled labor, modern infrastructure, and pro-business policies. With a labor force participation rate of over 70%, and 100,000 annual graduates in STEM and healthcare-related disciplines, Malaysia supplies the largest MedTech talent pool in ASEAN. It also features strong infrastructure, including high-tech industrial parks (e.g., Batu Kawan, Kulim) and global logistics connectivity, ranking 2nd in SEA.

- Government support has been a key enabler of sector growth, including 100% foreign ownership, streamlined expatriate employment, and generous tax and R&D incentives. The recently launched New Industrial Master Plan 2030 (NIMP 2030) further prioritizes the MedTech sector, with emphasis on advanced technologies (e.g., minimally invasive devices, AI, robotics), value chain integration, and regulatory harmonization.

- Malaysia's MedTech sector is export-oriented and globally integrated, with significant foreign direct investment (FDI) from companies such as B. Braun, Abbott, and Boston Scientific. These multinationals produce complex, low-to-medium volume products for export to key markets including the US, Germany, and the Netherlands, supported by a growing base of local contract manufacturers and automation system providers.

# Malaysia's MedTech Sector

## Dutch opportunities

- There is a strong and growing need for advanced manufacturing partnerships, particularly in the areas of high-precision engineering, cleanroom automation, and robotics. Dutch companies with expertise in optomechatronics, motion control systems, and AI-enabled technologies are well-positioned to complement Malaysia's maturing manufacturing base and fill capability gaps in complex system assembly and device miniaturization.

- Malaysia's contract manufacturing sector is expanding rapidly, with projected growth of 8% CAGR through 2030 and potential revenues exceeding $5 billion. However, there remains a lack of full-service CMOs and private-label MedTech manufacturers. This creates an opening for Dutch OEM/ODM companies to offer turnkey services or co-develop regionalized product lines with Malaysian partners.

- Local innovation ecosystems and research capacity remain underdeveloped, presenting further opportunity for Dutch research institutions, startups, and universities to engage in collaborative R&D, clinical validation, and technology transfer. Public-private research funding is available through agencies like MRANTI, and Dutch technical universities (TU Delft, TU Eindhoven, TU Twente) could play a pivotal role in shaping MedTech innovation hubs.

- The Malaysian market also presents a cost-efficient alternative to Singapore for regional operations, offering the same ASEAN market access (600+ million consumers) at lower operating costs. Local acquisition, strategic joint ventures, and regional co-development initiatives are all viable entry routes for Dutch firms aiming to expand into Southeast Asia.

- In summary, the Malaysian MedTech sector offers Dutch advanced manufacturing firms a rare combination of market access, policy support, technical gaps, and local demand that can be leveraged for both regional growth and global supply chain resilience.

# Contents

# 1 Introduction

The Netherlands is a global leader in high-tech innovation, renowned for its expertise in advanced manufacturing, engineering, and MedTech development. Despite its compact size, the country is home to world-class technological advancements, including cutting-edge microchips, photolithography machines, and AI-driven MedTech solutions.

Malaysia, as ASEAN's largest MedTech market, has emerged as a key global manufacturing hub, hosting over 300 multinational MedTech firms. With a strong infrastructure, skilled workforce, and a thriving export-driven industry, the sector continues to attract investment and foster innovation.

- This sector study, initiated by the Embassy of the Kingdom of the Netherlands and the Netherlands Enterprise Agency (RVO), presents an overview of the Malaysian MedTech sector and aims to explore opportunities for Dutch companies in Malaysia's MedTech sector.

# 2 Introducing Malaysia

## Prime location & global access

- Trade-to-GDP ratio: 127.9%, highly integrated globally

## Robust talent & industrial ecosystem

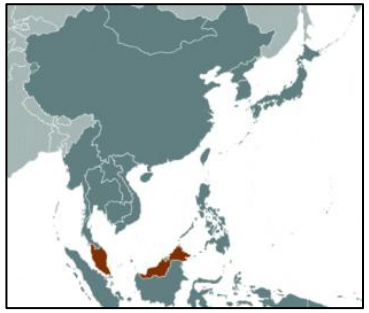
- Malaysia has the largest medical device market and the largest MedTech talent pool in the region

## Modern infrastructure & connectivity

- Advanced logistics network with strong trade connectivity (7th globally; 2nd in SEA)

## Pro-business government policies

- 100% foreign ownership, generous tax incentives, strong IP protection, and streamlined processes for expatriates




# 3 Malaysia from a Regional Perspective


**Malaysia is one of the major global offshore manufacturing hubs for medical devices**

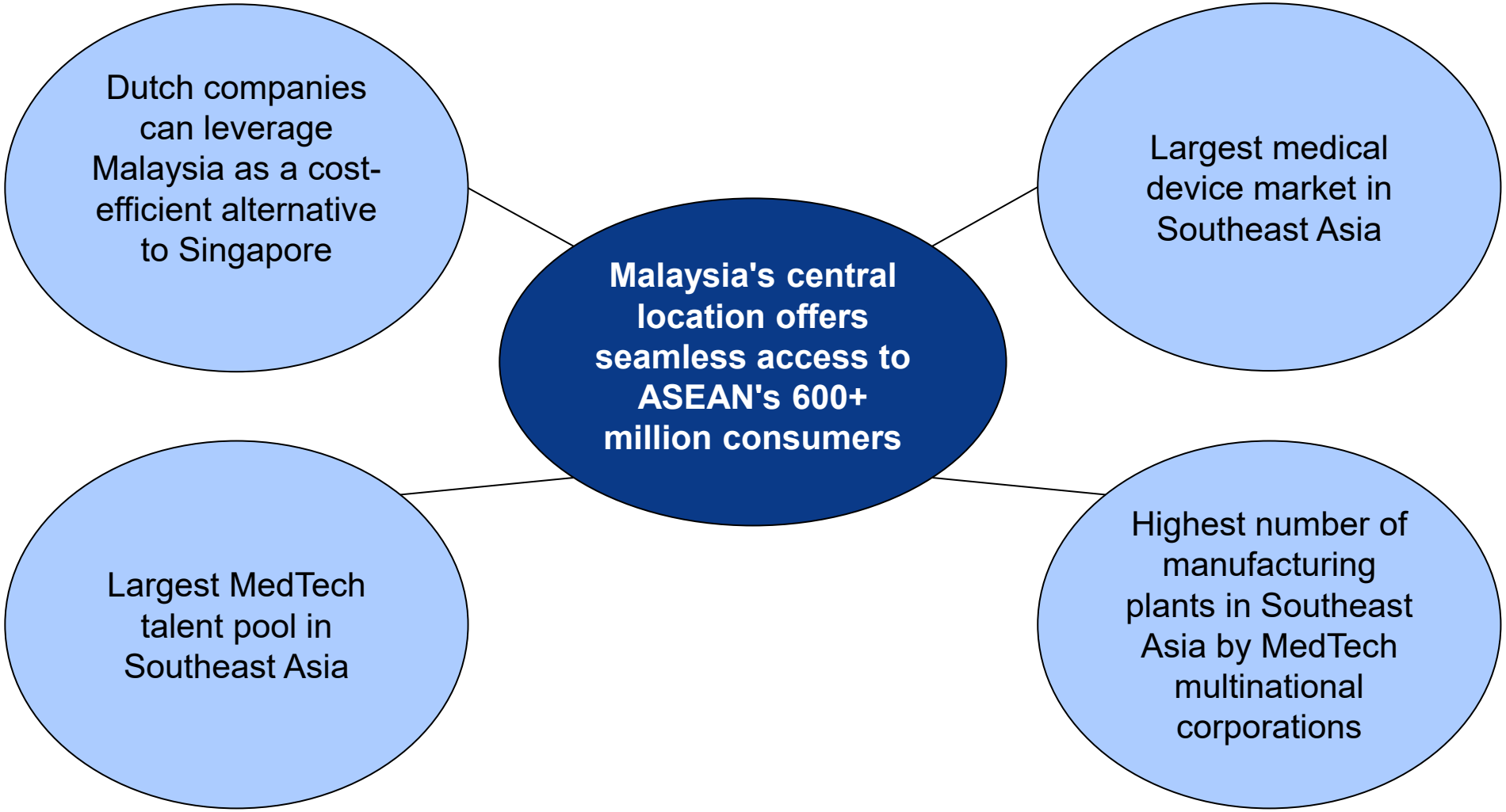
# Market size comparison

**Malaysia has the largest medical device market when compared across key ASEAN countries**


| ASEAN Countries | Market Size (EUR) |
|---|---|
| Malaysia | 2 billion |
| Thailand | 1.7 billion |
| Vietnam | 1.6 billion |
| Indonesia | 1.2 billion |
| Singapore | 700 million |
| Philippines | 648 million |

*Source: MIDA, 2025*

# Leveraging Malaysia in the larger SEA ecosystem



# Why Malaysia?

**Main competencies of local companies in MedTech**

- High-volume manufacturing of consumables
- Precision engineering and component manufacturing
- Electronics and electrical (E&E) component supply
- Supporting services, after sales, and maintenance
- Raw material provision
- Designing, building, and assembly capabilities
- Local companies offering one-stop shop for all services
- Capable automation integrators and producers of MedTech machines

A significant portion of Malaysian MedTech companies operate as suppliers to multinational corporations or specialize in essential services such as sterilization, indicating a strong reliance on the established MNC-driven ecosystem

# Strengths of local companies (1/2)

## Description of local competencies and example companies

**High-volume manufacturing of consumables**
Malaysia excels in the production of disposable medical products, particularly rubber gloves and other consumables. They are the largest producer of rubber gloves globally. This strength stems from established infrastructure, skilled labor and access to raw materials

**Precision engineering and component manufacturing**
Local companies possess capabilities in precision machining, as well as in plastic and metal component fabrication essential for producing intricate medical device components

**Electronics and electrical (E&E) component supply**
Leveraging Malaysia's established E&E sector, local companies contribute to the supply of electronic components and sub-assemblies for medical devices. This allows for the integration of electronic functionalities into medical equipment

*Not an exhaustive company list*

# Strengths of local companies (2/2)

## Description of local competencies and example companies

**Supporting services**

Local companies provide supporting services, including:

- Advanced packaging
- Industrial automation
- Manufacturing IoT
- Sterilization
- Logistics and distribution
- Calibration and testing

These services ensure the quality and safety of medical devices

**Advanced packaging**

antamax, Oliver Healthcare Packaging, TAKO Healthcare, SteriPack

**Industrial automation**

**Manufacturing IoT**

GREATECH, IOT SATA

**Calibration & testing**

METCAL Technologies, NIQ

**Sterilization**

STERIS, KHTP Sterilisation, GRAND TEN, SteriPack, SINA

**Logistics & distribution**

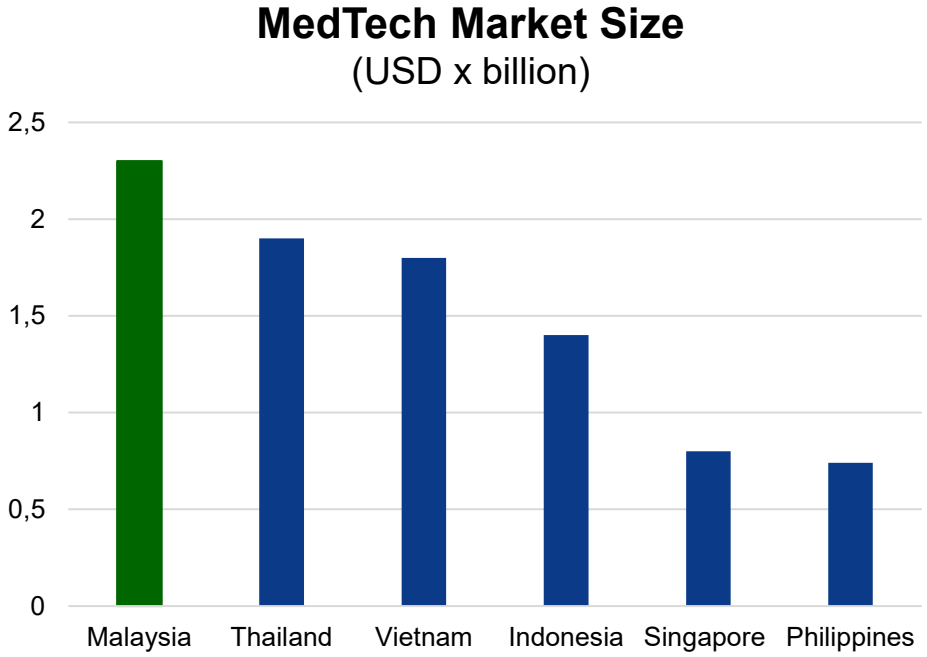
KGW medica, UMC, Stellar Medical, Getz Healthcare

*Not an exhaustive company list*

# 4 MedTech Ecosystem in Malaysia

**The following pages provide an overview of the MedTech ecosystem in Malaysia. Focus areas include the workforce, key stakeholders, infrastructure and government support**

- Malaysia has the highest number of manufacturing plants in Southeast Asia operated by MedTech multinational corporations
- Malaysia has the largest medical device market and the largest MedTech talent pool in the region




## Drivers of MedTech Sector Growth in Malaysia

- Strategic government support
- Strong high-tech manufacturing base
- Skilled workforce and R&D growth
- Cost effectiveness
- Favorable regulatory environment
- Regional hub advantage (ASEAN)
- Growing domestic healthcare demand / medical tourism
- Plans to expedite shorter registration of products at MDA
- Working toward harmonization of HS codes within the ASEAN region

# Malaysian MedTech ecosystem (1/5)

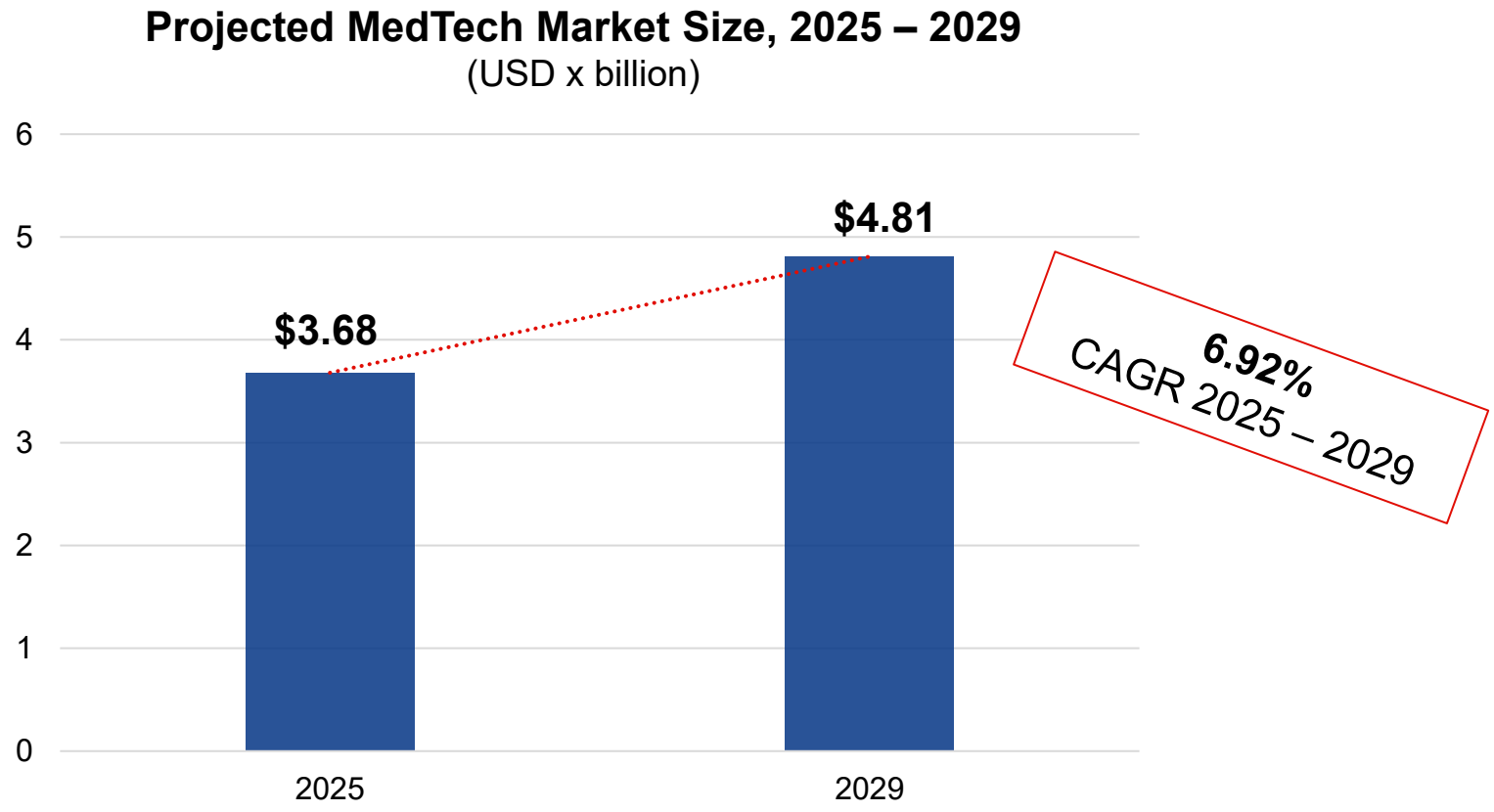
## Overview

**In the 1990s, Malaysia began as the world's largest exporter of medical rubber gloves. Today, Malaysia has developed into a thriving MedTech hub with continued growth anticipated**

**Largest medical device market in Southeast Asia**

**Over 300 MedTech related firms in Malaysia**

**Over 90% of Malaysian medical devices are exported to other countries**



# Malaysian MedTech ecosystem (2/5)

## Share of local vs. foreign MNCs

**Manufacturing base:** Malaysia hosts over 300 medical device manufacturers, of which more than 30 are foreign MNCs, including prominent names like Abbott, B. Braun, Toshiba Medical Systems, and Boston Scientific

**Investment Composition:** In 2024, foreign direct investments (FDI) accounted for approximately 61.6% of the total approved investments in the medical devices sector, while domestic direct investments (DDI) made up the remaining 38.4%

**Export Dominance:** Over 90% of medical devices manufactured in Malaysia are exported, with MNCs primarily producing high-value equipment such as diagnostic imaging systems, pacemakers, and surgical instruments. Supported by a strong network of local contract manufacturers of MedTech parts and equipment and automation system providers

# Malaysian MedTech ecosystem (3/5)

## Workforce

### Population statistics

- Total population of Malaysia is ~34.6 million (2024)
- Labor force participation rate is 70.6%
- Unemployment rate is 3.1%
- Median age is 31.8 years
- Population growth rate is estimated at 0.99%, declining since 2000
- 78.7% of the population lives in an urban setting, with the rate of urbanization increasing at 1.87% annually

### MedTech workforce

- The MedTech workforce is concentrated in the Selangor, Kedah and Johor regions region
- ~25,000 R&D workers overall
- 48th out of 133 countries in labor productivity
- 1.1% in annual labor productivity growth
- 45.4% of high-tech manufacturing in total manufacturing output
- 30th out of 133 countries in cluster development

**+70,000 people employed in MedTech**

### Students

- > 280,000 graduates per year
  - ~100,000 graduates per year in STEM & medical degrees
- 44% of tertiary students complete studies in science, technology, engineering, and mathematics (STEM) fields
- 58th in PISA test results
- 9% of foreign students attending universities
- 28.7% of workforce has tertiary education
- 49th out of 133 countries ICT skills integration in education
- 37th out of 134 countries in education-industry connectivity

### Skills

- 11.8% of workforce is equipped with advanced ICT skills
- 29.6% of workers employed in knowledge-intensive employment
- 20th out of 130 countries in foreign talent attraction (GTCI, 2023)
- 22nd out of 133 countries in ease of finding skilled employees
- 24% of companies offering formal training 38th out of 133 countries in employee development and training
- 39th out of 133 countries in emerging technology adoption

# Malaysian MedTech ecosystem (4/5)

## Key stakeholders

### Universities & research institutes

**Universities**

- University of Malaya (QS world rank: 60th)
- University of Sains Malaysia (QS world rank: 138th)
- University of Kebangsaan Malaysia (QS world rank: 146th)
- University of Teknologi Malaysia (QS world rank: 181st)

**Research institutes**

- Malaysian Research Accelerator for Technology and Innovation (MRANTI)
- Standard and Industrial Research Institute of Malaysia

### Research programs

- National Technology & Innovation Sandbox
  - Provides funding for technology and market validation and regulatory compliance
- Bridging Fund
  - Bridging the gap between pre-commercialization and full market entry
  - Enhancing R&D product readiness for successful market penetration
- Malaysia Laboratories for Academia-Business Collaboration
  - Facilitating the translation of high-potential research into market-ready products
- Industry4WRD Domestic Investment Strategic Fund
  - Supports automation and high-tech manufacturing to facilitate foreign companies' endeavors of setting up production and supply chains in Malaysia

### Key industry players

# Malaysian MedTech ecosystem (5/5)

## Infrastructure

**The Federal state has played a significant role in attracting growth in the MedTech sector through tax incentives, policies and through establishing high-tech industrial parks (under State government in the respective states)**

### High-tech industrial parks

- The parks are concentrated on the eastern side of the country, spanning from Johor up to Kedah.
- Penang has the highest concentration of MedTech companies in Malaysia – including MedTech MNCs and service providers like Abbott, Boston Scientific and B Braun.
- Examples of high-tech industrial parks in Penang include Batu Kawan Industrial Park (BKIP) and Kulim High-Tech Park.

# Medical devices produced in Malaysia


*Source: AMMI*

**In 2023, exports amounted to ~RM 28.2 Billion**

**Remark:** Medical gloves are one of the largest consumables/products manufactured in Malaysia; however, this is not the focus of this study

# Government support (1/4)

## Manufacturing license

### Eligibility criteria

Shareholders funds of RM2.5m and above OR Employing 75 or more full-time paid employees

+

Full-time workers at least 80% Malaysians

+

Capital investment per employee (CIPE) at least RM140,000

+

25% of total manpower are managerial, technical and supervisory (MTS) staffs OR Value Added (VA) at least (40%)

A company with shareholders' 'funds of RM2.5m and above
OR
Employing 75 or more full-time paid employees

Obtain a **manufacturing license**

***Please note:***

- "Shareholders' funds" – a company's paid-up capital, reserves, balance of share premium account and balance of profit and loss appropriation account
- "Full-time paid employees" – persons working in the establishment for at least six hours a day and at least 20 days a month for 12 months during the year and who receive a salary

# Government support (2/5)

## Tax incentives & grants – Federal level

### Tax incentive programs

| | General incentive | High technology incentive |
|---|---|---|
| **Pioneer Status*** | 70% income tax exemption from the statutory income for 5 years | 100% income tax exemption from the statutory income for 5 years |
| **Investment Tax Allowance*** **Mutually exclusive* | 60% of Investment Tax Allowance on qualifying capital expenditure incurred within a period of 5 years to be offset up to 70% of statutory income | 60% of Investment Tax Allowance on qualifying capital expenditure incurred within a period of 5 years to be offset up to 100% of statutory income |

Remark: A new incentive mechanism will be introduced tentatively in Q3 2025

### Foreign investment accelerator fund (FIAF)

**Matching 50% (1:1)**

- R&D grant
- Training grant

**To qualify, a company must:**

- Be in operation at least 3 years in Malaysia / other countries with proven track record
- Meet prerequisite criteria conditions such as R&D expenditure, Industrial Training program with local institutions in TVET fields, vendor development, investments in green technology, etc.

Deadline for FIAF submission: December 31st, 2025
Period of grant approval: 2 years
Evaluation fee per application: RM12,000 (non-refundable)

*Source: MIDA, 2025*

# Government support (3/4)

## Incentives for R&D (1/2)

**What qualifies as R&D?**

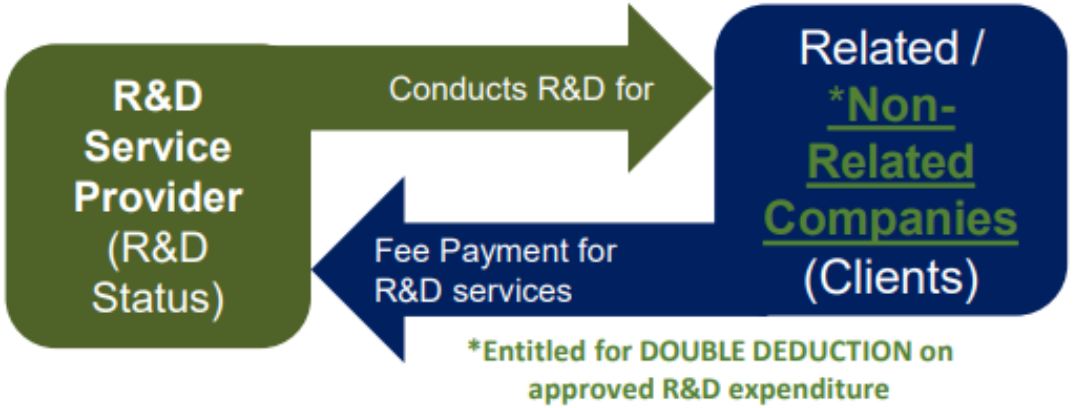
- Research and Development (R&D) involves a structured, experimental, and investigative effort in science or technology that includes novelty or technical uncertainty.
- The goal is to:
  - Gain new knowledge, or
  - Use research outcomes to develop or improve materials, devices, products, processes, or produce

**Eligibility criteria:**

- Purpose: Must aim to acquire knowledge, create new products/processes, or improve existing ones
- Involves Risk: Must include technical uncertainty or novelty
- Approach: Must follow a systematic and scientific method

**Activities that DO NOT qualify:**

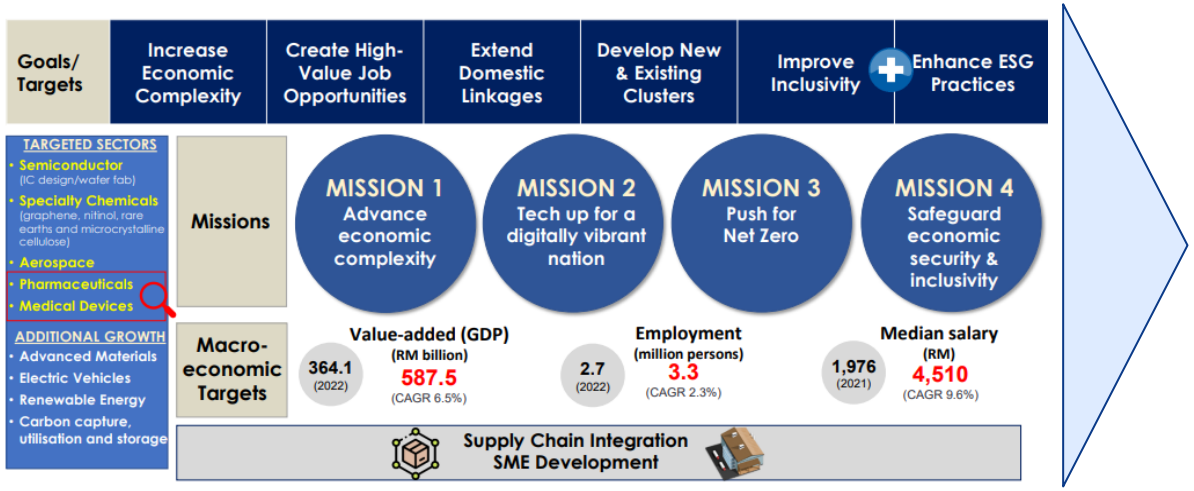
- Routine quality testing of products/materials
- Research in humanities or social sciences
- Efficiency surveys or management studies
- Routine data gathering
- Sales or market research
- Cosmetic or routine modifications to products/processes



# New Industrial Master Plan 2030 (NIMP 2030)

## Strategic policies for advancing Malaysia's MedTech sector

**The NIMP 2030 outlines specific strategies to bolster Malaysia's position as a global MedTech hub**




### Focus on High-Value Medical Devices

- Prioritize the development and manufacturing of minimally invasive devices, point-of-care diagnostics, and technology-driven medical devices.

### Integration of Value Chains

- Encourage collaboration between the medical device sector and other industries, such as machinery and equipment (M&E) and chemicals, to enhance product development and manufacturing capabilities.

### Promotion of Industry 4.0 Technologies

- Advocate for the adoption of advanced technologies like artificial intelligence, robotics, and the Internet of Things to drive innovation and improve manufacturing processes.

### Strengthening R&D and Innovation Ecosystems

- Foster partnerships among businesses, universities, and government agencies to support research, development, commercialization, and innovation (RDCI) in the MedTech sector.

### Enhancement of Regulatory and Compliance Frameworks

- Collaborate with the Medical Device Authority (MDA) and other stakeholders to streamline regulatory processes, ensuring that Malaysian medical devices meet international standards and facilitate easier market access.

# Regulatory framework in Malaysia

## Certification, standards, and regulatory oversight in the MedTech sector

**Key Certifications and Standards for MedTech Components & Finished Products**

- ISO 13485: Quality management system specific to medical devices.
- ISO 14971: Risk management for medical devices.
- IEC 60601: Safety and performance standards for medical electrical equipment.
- Malaysian Standards (MS): Compliance with national standards where applicable.
- CE Marking / FDA Approval: Required for exports to European and US markets, respectively.

**Regulatory Body**

**Medical Device Authority (MDA) under the Ministry of Health Malaysia (MOH):**

- Responsible for registration, licensing, and post-market surveillance of medical devices.
- Enforces the Medical Device Act 2012 (Act 737), governing the safety, quality, and efficacy of medical devices.

**Additional Compliance Requirements**

- Clinical evaluation and performance data submission.
- Labeling and packaging regulations consistent with international norms.
- Vigilance reporting and adverse event monitoring.

# Key agencies supporting Malaysia's MedTech sector

**Malaysian Investment Development Authority (MIDA)**

- Issues manufacturing licenses for MedTech companies.
- Provides investment incentives and tax breaks to promote industry growth.
- Facilitates industrial development and foreign direct investment in the sector.

**State Investment Promotion Agencies (IPAs) – e.g., Invest Penang, Invest Selangor, Invest Johor**

- Act as facilitators for business networking and partnerships.
- Engage with local authorities to streamline regulatory and operational processes.
- Attract and support state-level investments in MedTech manufacturing and innovation.
- Provide local market insights and logistical support to investors.

**Malaysia Medical Device Authority (MDA)**

- Regulates registration, licensing, and quality control of medical devices.
- Enforces compliance with Medical Device Act 2012 to ensure safety and efficacy.
- Oversees post-market surveillance and adverse event reporting.
- Supports industry development through regulatory guidance and capacity building.

# State investment promotion agencies

**State Investment Promotion Agencies (IPAs) are government-linked entities established by individual Malaysian states to attract, facilitate, and support investments at the state level. They complement federal bodies like the Malaysian Investment Development Authority (MIDA) by offering localized support and guidance**

## Role with potential investors

- Serve as the first point of contact for investors exploring opportunities within specific states.
- Act as liaisons between investors and state authorities, including land offices, local councils, and utility providers.
- Provide market intelligence, site recommendations, and insights into regional incentives

## Key services and support offered

- Investment Facilitation: End-to-end assistance in setting up operations, from site selection to regulatory approvals.
- Incentive Advisory: Guidance on state-level incentives, grants, and soft-landing programs.
- Networking Support: Introductions to local partners, service providers, and supply chain players.
- Aftercare Services: Ongoing support post-establishment, including expansion facilitation and troubleshooting.

**Notable State IPAs**

- Invest Selangor
- Invest Penang
- Invest Johor
- InvestKL (Kuala Lumpur)
- NCIA (Northern Corridor)
- ECER (East Coast Region)

# Recent MedTech investments in Malaysia

**Date:** March 2024
**Investment:** RM 100 Million
**Location:** Johor, Malaysia

- Masimo Medical Technologies Malaysia Sdn. Bhd., a subsidiary of U.S.-based Masimo Corporation, has invested RM100 million (approximately USD 21 million) to establish its first medical device production facility in Pasir Gudang, Johor
- The 133,000-square-foot facility is designed to produce up to 100 million pulse oximetry sensors and devices annually for both domestic and export markets.

**Date:** August 2024
**Investment:** RM 1 Billion
**Location:** Johor, Malaysia

- Insulet Corporation has invested approximately $200 million to establish a 400,000-square-foot manufacturing facility in Johor Bahru, Malaysia, aimed at producing its insulin delivery system
- This state-of-the-art plant, which is twice the size of Insulet's U.S. facility, currently employs over 350 people and is expected to expand to more than 1,000 employees in the coming years

**Date:** November 2022
**Investment:** RM 30 Million
**Location:** Kuala Lumpur, Malaysia

- Cochlear Limited has invested over RM30 million to expand its global manufacturing facility in Kuala Lumpur, Malaysia, enhancing its capacity to meet the growing demand for cochlear and acoustic hearing implants worldwide
- The 50,000-square-foot facility, powered entirely by renewable energy, supports Cochlear's mission to help individuals with hearing loss and is now the company's third-largest site globally

# Medical device clusters

West Malaysia

Northern Region

Eastern Region

Central Region

Southern Region


**Key products manufactured in Malaysia**

- Orthopedic implants
- Pacemakers
- Surgical instruments
- Contact lenses
- Laryngeal masks
- Medical gloves

# Medical device clusters

## Northern region: Penang, Kedah, Perlis, & Perak


- Penang represents the primary hub for MedTech enterprises.
- Concertation of leading global medical device manufacturers exists in Penang, including Abbott, Boston Scientific, B. Braun, Smith & Nephew, Steris, and Hoya (6 of the top 30 by revenue).
- Established electrical and electronics industry in Penang during the 1970s laid the groundwork and essential infrastructure for its present robust medical technology sector.
- The flourishing medical device industry in Penang has generated beneficial regional economic impacts, extending into the neighboring state of Kedah.

**Product Owner**

Ambu, VISCO, HAEMONETICS, Boston Scientific, Abbott, STERIS, TECOMET, B BRAUN, HOYA, smith&nephew, PENTAX MEDICAL

**Service Provider**

plexus, EMS-M Engineered Medical Systems Malaysia Sdn. Bhd., JABIL, Maxiron SDN BHD, PENTAMASTER, GREATECH, SAM, KHTP STERILISATION Your Health . Our Priority

# Medical device clusters

## Central, Southern & Eastern regions


### Central region

A good mix of Medtech companies from producers of rubber gloves to sterilization and halal certified bone graft cement

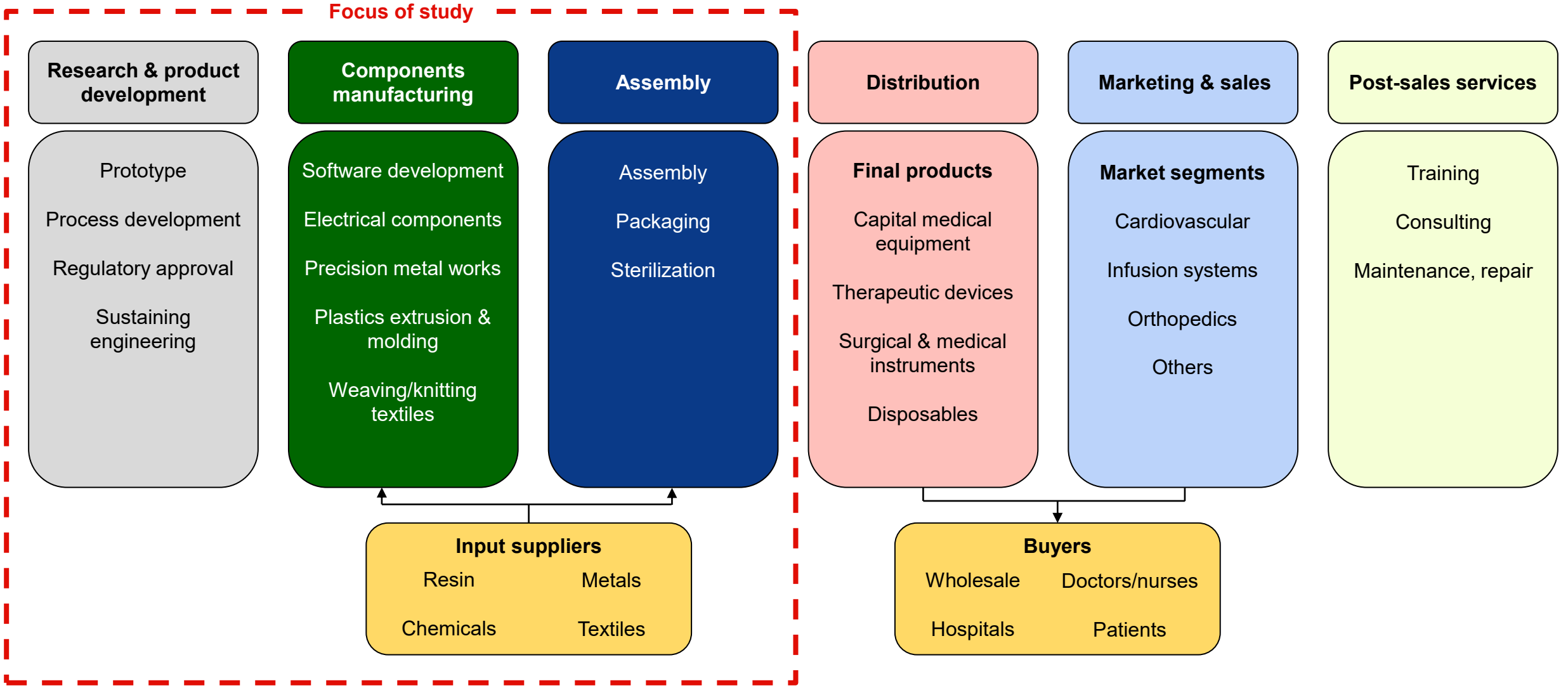
### Southern region

Malaysia-Singapore Special Economic Zone (JS-SEZ) with competitive cost of doing business

### Eastern region

Represented mainly by local MedTech companies

# 5 The MedTech Value Chain



# Malaysia in the MedTech value chain

## Overview, entire value chain

Industry, government and academia are working together to advance the (MedTech) manufacturing ecosystem in Malaysia

Malaysia is the largest sterilization supplier in Southeast Asia

Government agencies, investment promotion agencies, knowledge institutes, industry associations and regulatory bodies interact with companies/organizations across the entire value chain

**Focus of study**

Industry 4.0 advancements, artificial intelligence (AI), automation and robotics are all key focuses for the MedTech sector

Wide-range of manufactured products including implantable devices, surgical instruments and diagnostic imaging equipment

Focus has shifted towards higher value-added products (e.g., medical electrodes and ultrasound diagnostic systems)

| Research & product development | Components manufacturing | Assembly | Distribution | Marketing & sales | Post-sales services |
|---|---|---|---|---|---|
| Prototype | Software development | Assembly | **Final products** | **Market segments** | Training |
| Process development | Electrical components | Packaging | Capital medical equipment | Cardiovascular | Consulting |
| Regulatory approval | Precision metal works | Sterilization | Therapeutic devices | Infusion systems | Maintenance, repair |
| Sustaining engineering | Plastics extrusion & molding | | Surgical & medical instruments | Orthopedics | |
| | Weaving/knitting textiles | | Disposables | Others | |

**Input suppliers**

Resin, Metals, Chemicals, Textiles

**Buyers**

Wholesale, Doctors/nurses, Hospitals, Patients

Other suppliers/services include precision engineering, plastic injection molding, packaging and assembly services

Over 90% of products are exported to the global top 10 export destinations (incl., US, Germany, the Netherlands)

**System Integrators**

System integrators like Pentamaster, Greatech, and MMS typically operate in the mid-to-downstream segment of the MedTech value chain, specifically within automation, assembly, testing, and packaging

**Where does Malaysia fit?**

Malaysia plays a significant role in the mid-stream of the value chain, particularly in (component) manufacturing and assembly

Companies are increasingly involved in activities like packaging and distribution, alongside their large-scale sterilization services

**What's next?**

Companies are working along vertical integration, offering a more complete set of offerings from co-designing to engaging with clients on value analysis and value engineering to offering innovative solutions and materials to complementary services such as sterilization, assembling, and packaging to their customers

***Please note:***
*The company logos provide only a snapshot of the relevant companies; there are many other examples*

# Malaysia in the MedTech value chain

## Research & product development

In Malaysia, the MedTech industry is dynamic, with numerous companies and research institutions involved in various aspects of research and product development.

**Research & product development**

Prototype

Process development

Regulatory approval

Sustaining engineering

**Prototypes**

Both local and multinational companies are engaged in prototype development, leveraging advanced technologies like 3D printing and rapid prototyping

**PCCS Group** has established a dedicated medical product division focused on prototyping for medical devices, particularly for surgical tools, diagnostic equipment, and drug delivery systems

**Process development**

Malaysian MedTech companies often partner with international firms to streamline their production processes and adopt best practices

**Straits Orthopedics** focuses on developing efficient manufacturing processes for its products. The company works closely with R&D teams to optimize production techniques and improve device performance

**Regulatory approval**

Many companies in Malaysia have established regulatory affairs departments to handle these approvals and navigate the complex regulatory landscape, working closely with MDA (the main regulatory body on MedTech in Malaysia)

**Medtronic** has a presence in Malaysia where it conducts research and development focused on meeting international regulatory standards for its devices, including those in the cardiovascular and diabetes sectors

**Sustaining engineering**

In Malaysia, companies often focus on improving the performance, reliability, and usability of their existing medical devices

**Mediway** is involved in sustaining engineering for medical devices, particularly focusing on improving the designs of equipment used in rehabilitation and physiotherapy

Robotics and AI are a large focus for research within the Malaysian MedTech ecosystem

- The first robotic-assisted surgery using the 'hinotori Surgical Robot System' was performed in Malaysia at the Mahkota Medical Center (link).
- Sunway Medical Center launched their Spine Robotic Surgical System which 'integrates AI-powered surgical planning, real-time visualization, data analytics, and robotics for improved precision and efficiency in spinal procedures' (link); Plexus is also working on robotics related activities.

*Not an exhaustive company list*



*Sources: BCI Global Databases, 2025; Official Company Websites, 2025; IPA Websites, 2025*

# Malaysia in the MedTech value chain

## Components manufacturing

The Malaysian ecosystem has continued advancing towards higher value-add devices/systems and innovative materials/solutions. Several notable products that are manufactured in Malaysia include: radiographic and ultrasound diagnostic systems, defibrillators, advanced pacemakers, and medical electrodes.

**Components manufacturing**

- Software development
- Electrical components
- Precision metal works
- Plastics extrusion & molding
- Weaving/knitting textiles

### Software development

Software development in the MedTech industry in Malaysia typically focuses on developing applications for medical devices, healthcare management, patient monitoring systems, and data analytics platforms

**VeecoTech** provides comprehensive digital solutions, including software and app development

### Electrical components

Malaysia plays a significant role in the manufacturing of electrical components for the MedTech industry, including sensors, circuits, wiring harnesses, and other electronic systems used in medical devices like imaging equipment, pacemakers, and infusion pumps

**BCM Electronics** is a key player in manufacturing electronic components, specializing in PCBs and other electrical assemblies

### Precision metal works

Precision metal works in Malaysia support the production of surgical instruments, medical implants, and other high-precision metal components for medical devices

**IMA Automation** provides advanced automation assembly solutions, including precision handling and assembly

### Plastics extrusion/molding

Malaysia has a well-established plastics manufacturing sector, producing plastic components like tubes, casings, housings, and connectors used in medical devices

**Maxiron** is involved in the production of disposable medical PVC tubing

### Weaving/knitting textiles

The textile industry in Malaysia is essential to produce materials used in medical garments, surgical drapes, wound care products, and implantable devices

**V3bio** develops and manufactures infection control products, including advanced wound care and disinfection solutions, utilizing electro-activated technology

*Not an exhaustive company list*

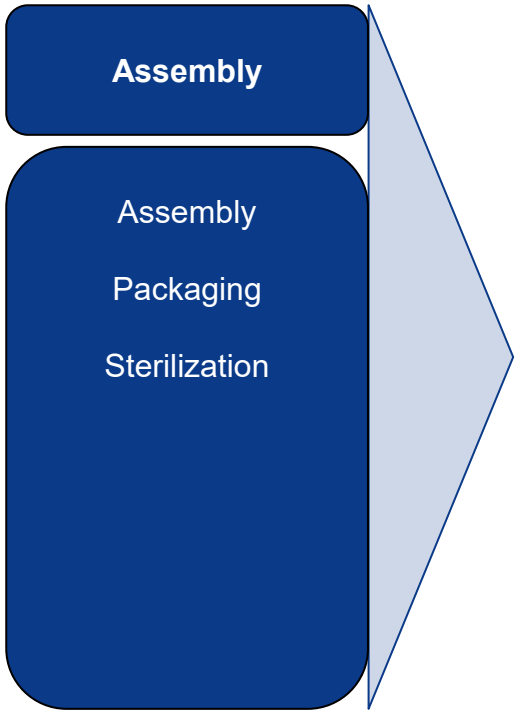


*Sources: BCI Global Databases, 2025; Official Company Websites, 2025; IPA Websites, 2025*

# Malaysia in the MedTech value chain

## Assembly

In Malaysia, the MedTech industry is a significant part of the manufacturing landscape, with a strong focus on assembly, packaging, and sterilization of medical devices




**Assembly**

Assembly in the MedTech industry involves the integration of components into final medical devices. Common devices assembled in Malaysia include diagnostic equipment, surgical tools, implants, and drug delivery systems

**IMA Automation** provides advanced automation assembly solutions, including precision handling and assembly

**Packaging**

Packaging in the MedTech industry is a critical part of the manufacturing process, as it ensures that medical devices are protected, sterile, and compliant with regulatory standards

**Oliver Healthcare Packaging** designs and manufactures sterile barrier packaging solutions for the medical device and pharmaceutical industries

**Sterilization**

There are several sterilization methods used in Malaysia, including ethylene oxide (EO) sterilization, gamma radiation, and steam sterilization, depending on the type of device and materials involve

**KHTP Sterilisation** provides gamma irradiation and ethylene oxide sterilization services for medical devices, pharmaceuticals, and other products requiring microbial reduction

*Sterilization services in Malaysia are primarily concentrated in the Northern and Central regions, with limited to no presence in the South. This lack of infrastructure has created a significant bottleneck for MedTech companies considering operations in the southern region. For example, Steris, the largest provider of sterilization services in Malaysia (and globally) has no facilities in the southern region of Malaysia.*

**Combination (assembly, packaging & sterilization)**

Several companies in Malaysia offer integrated solutions for the assembly, packaging, and sterilization of medical devices

**SteriPack** provides a one-stop solution that includes assembly, packaging, and sterilization services. They specialize in high-volume medical devices and consumables, offering turnkey solutions that meet international quality standards

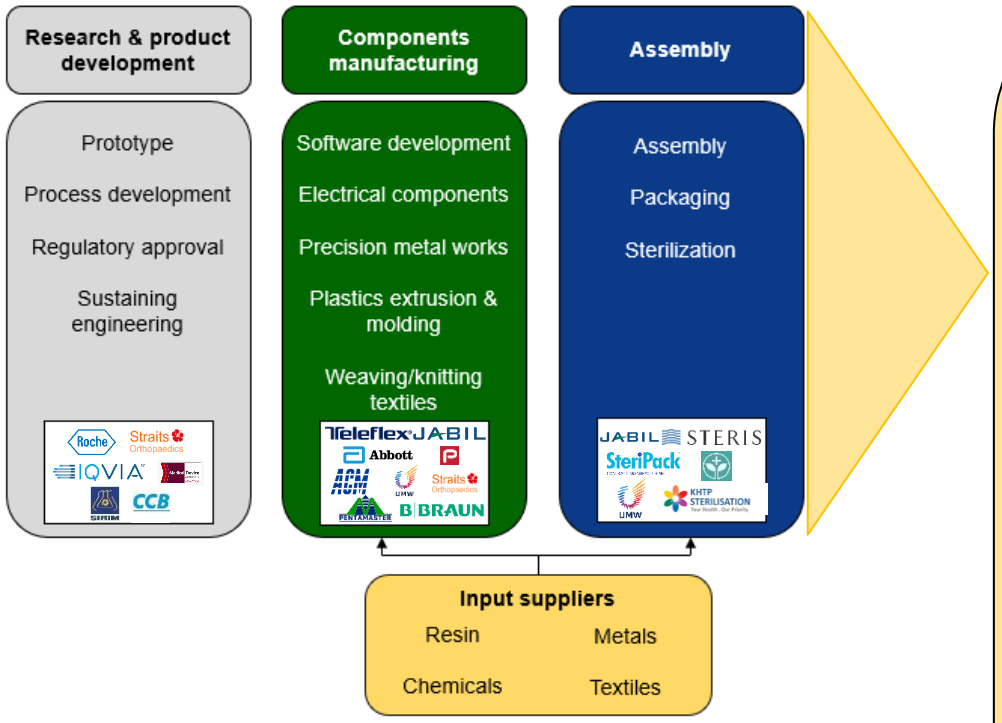
*Not an exhaustive company list*



*Sources: BCI Global Databases, 2025; Official Company Websites, 2025; IPA Websites, 2025*

# Malaysia in the MedTech value chain

## Snapshot: Contract manufacturing (1/3)




**Contract manufacturing (CM)**

**Contract manufacturers (CMs) in Malaysia are active in both component manufacturing and assembly; although, there is a greater presence in component manufacturing**

**What do CMs do in Malaysia?**

- Specialize in producing medical devices and components for OEM's, accelerating innovation and reducing operational burdens.
- Integrate advanced capabilities like additive manufacturing and automation to produce increasingly complex and customized devices.
- Offer a range of services, from specialized production to potential end-to-end solutions including design, assembly and sterilization.

**Opportunities for CMs in Malaysia**

- Rising demand for outsourcing by OEMs seeking cost-effective and specialized production, particularly for complex and miniaturized devices.
- Emerging trends like the integration of advanced manufacturing technologies, digitalization, innovative materials/solutions, and the move towards full-service offerings for CMOs.

***Please note:***
*The company logos provide only a snapshot of the relevant companies, there are many other examples*



*Sources: BCI Global Databases, 2025; Official Company Websites, 2025; IPA Websites, 2025*

# Malaysia in the MedTech value chain

## Snapshot: Contract manufacturing (2/3)

The contract manufacturing (CM) within Malaysia's MedTech industry is in its development phase. While there is a solid presence of component CMs in the country, there is still a tangible absence of full-service CMs as well as of private label manufacturers.

**Contract manufacturing (CM)**

Private label manufacturing & full-service CM

Component CM

Contract packaging & assembly

Testing and validation labs

**Private label manufacturing and full-service contract manufacturing**

Also known as "turn-key solutions providers", these companies are engaged to design, develop and produce medical devices with a high level of customization based on their clients' product specifications.

**Alliance Contract Manufacturing** offers comprehensive contract manufacturing services, specializing in the production of medical devices and other regulated products.

**Component contract manufacturing**

Components are the centerpiece of Malaysia MedTech contract manufacturing industry which comes to no surprise given the country's strong capacities in "regular" component manufacturing sector. Some companies specialize in component manufacturing for specific MedTech products, while others serve a broad range of sectors, including MedTech.

**Straits Orthopedics** provides contract manufacturing services focused on components and instruments for orthopedic medical devices. They can deliver components with various sterilization statuses from "non-sterile packaged" to "gamma sterilized" level.

**Contract packaging & assembly**

Medical contract packing refers to the process of outsourcing the packaging of medical devices or products to packaging contractor, thus allowing medical device manufacturers and other healthcare companies to focus on their core competencies

**Graceheal Medic** specializes in providing packaging solutions that meet regulatory requirements and industry standards for medical devices and products. These solutions may include sub-assembly, kitting, labeling, and final carton packing.

**Testing and validation labs**

Several companies in Malaysia offer the service of conducting essential testing and validation of manufactured medical devices to ensure that they meet the necessary regulatory and safety standards.

**SQS Quality** provides quality assurance and compliance services, including testing, inspection, and certification, to ensure products and systems meet industry standards.

*Not an exhaustive company list*



*Sources: BCI Global Databases, 2025; Official Company Websites, 2025; IPA Websites, 2025*

# Malaysia in the MedTech value chain

## Snapshot: Contract manufacturing (3/3)

**Malaysia's MedTech contract manufacturing sector is in ascendency with a projected compound annual growth rate of around 8% from 2024 to 2030 expected to reach a projected revenue of approximately $5 billion USD by the end of the given period**

- Just as with the "regular" MedTech value chain, Malaysia is occupying a mid-stream position in the MedTech contract manufacturing value chain as result of its strong capabilities in component contract manufacturing and raising competencies in contract assembly and contract packaging.
- The country also hosts production facilities of a number of foreign contract manufacturers in the MedTech sector such as Plexus, Jabil, Sanmina and Steripack. As well as local MedTech companies.
- While the local companies in the sector as well as the national and regional investment promotion agencies state that their clients are key global MedTech companies, due to confidentiality reasons they are unable to disclose the names of their clients. However, there are some exceptions:
  - Syrma Johari performed product design, manufacturing and supply chain management for 7E Wellness, Sigtuple and MPBio Medicals.
  - Supercomal Medical Products is having successful long-term partnerships over 15 years with Edwards Lifesciences and Ambu.
  - Straits Orthopedics has been a key manufacturing partner to Smith & Nephew for over 17 years with over 50% of their output being supplied to Smith & Nephew.
  - Greatech has a collaboration with Dexcom to produce equipment for their glucose needles.



*Sources: BCI Global Databases, 2025; Official Company Websites, 2025; IPA Websites, 2025*

# Malaysia in the MedTech value chain

## System Integrators – Malaysia's unique offering

**System integrators like Pentamaster, Greatech, and Micro Modular Systems have a critical role in enabling scalability, precision, and regulatory compliance in manufacturing medical devices**

**Upstream: R&D & Component Manufacturing**

- Involves research, material science, design, and component fabrication (e.g., sensors, polymers, PCBs).
- May engage with component suppliers for system integration design.

**Midstream: Automation & Systems Integration**

- Design and build custom automation systems for high-precision assembly of medical devices (e.g., syringes, diagnostic kits, catheters, microfluidic devices).
- Provide test handling systems to ensure functional validation of critical components (optics, electronics, pressure systems).
- Offer vision inspection, robotics integration, and cleanroom-compatible systems for high-throughput and regulatory-compliant environments.
- Enable Industry 4.0 readiness: IoT connectivity, data logging, traceability - crucial for FDA/EU MDR compliance.

**Primary role of system integrators**

PENTAMASTER

GREATECH

MMS

**Downstream: Packaging, Labeling & Distribution**

- System integrators support automated packaging, sealing, labeling, and serialization systems, reducing contamination risk and improving throughput.
- Ensure compliance with medical device packaging regulations (e.g., ISO 11607).



*Sources: BCI Global Databases, 2025; Official Company Websites, 2025; IPA Websites, 2025*

# Supplier sourcing in Malaysia

## Decision-making process for high-value MedTech products in Malaysia

**In Malaysia, decision-making by product manufacturers when sourcing new suppliers for high-value medical devices follows a structured and rigorous procurement process to ensure quality, compliance, and risk mitigation**

**Pre-Qualification and Vendor Evaluation**
- Manufacturers often start by identifying and pre-qualifying potential suppliers through existing databases, industry referrals, or regulatory-approved vendor lists.
- Criteria include regulatory compliance (e.g., certifications like ISO13485), financial stability, technical capability, and quality track record.

**Invitation to Tender (ITT) or Request for Proposal (RFP)**
- Formal invitations are sent to shortlisted suppliers, especially for high-value or strategic components like pacemakers.
- The tender documents specify detailed product requirements, quality standards, delivery schedules, and contractual terms.

**Vendor Audits and Site Visits**
- Manufacturers may conduct on-site audits to verify manufacturing practices, quality control systems, and compliance with regulatory standards.
- This step is crucial for risk management in sourcing critical components.

**Evaluation and Selection Committee**
- A cross-functional team (including procurement, quality assurance, regulatory affairs, and technical experts) reviews bids based on quality, cost, lead time, and supplier reliability.
- Scoring systems and weighted criteria are often used to ensure objective decision-making.

**Contract Negotiation and Supplier Qualification**
- Upon selection, detailed contracts are negotiated covering quality agreements, warranty terms, and service level expectations.
- The supplier undergoes a qualification phase including trial orders or pilot runs before full-scale procurement.

**Regulatory Compliance Verification**
- Verification that the supplier's products meet Malaysian Medical Device Authority (MDA) requirements and other relevant international certifications.

**Fast track**
- If a foreign supplier is already producing for the client outside Malaysia, they may not need to go through the long process.
- One of the challenges faced is the registration of the product at MDA; however, there are plans by MDA to expedite the process and harmonize the registration within the ASEAN region.

# Malaysia in the MedTech value chain

## Snapshot: Straits Orthopedics (1/2)

**Company profile**

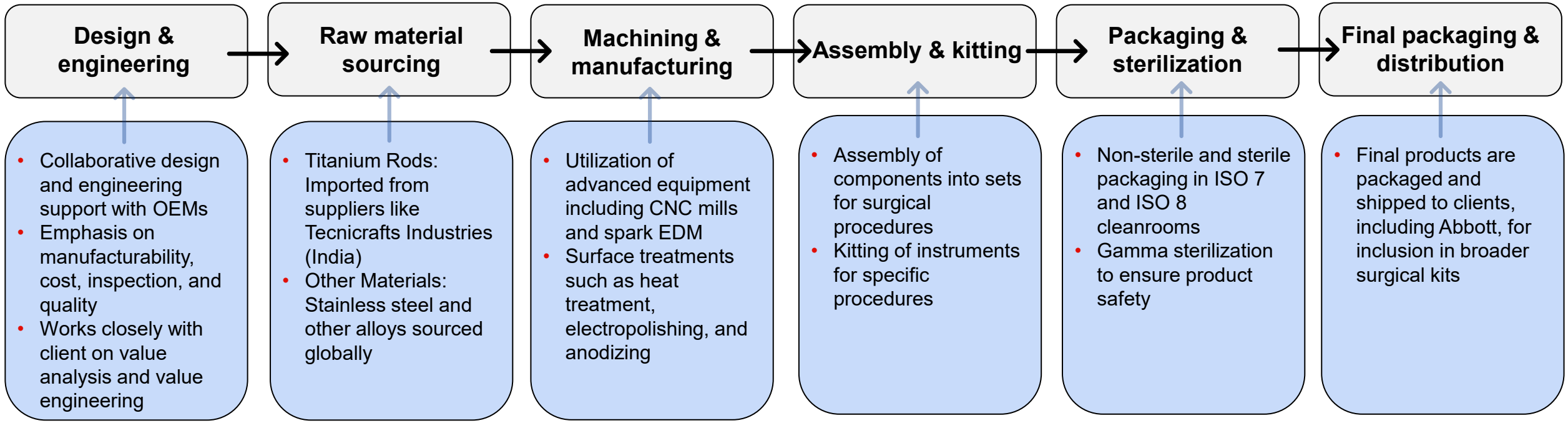
- **Founded:** 2002
- **Headquarters:** Penang, Malaysia
- **Facilities:** Five manufacturing sites totaling over 480,000 sq ft
- **Certifications:** ISO 13485:2016, ISO 9001:2015, US FDA registered
- **Ownership:** Majority stake held by Quadria Capital, with Apex Healthcare Bhd and founder Mr. TH Su retaining minority shares
- **Revenue:** Approximately US$30 million annually
- **Key Clients:** Smith & Nephew (60% of revenue), over 20 global OEMs

*The following slide provides an overview of the supply chain and suppliers of Straits Orthopedics, focusing on their titanium rod for leg implants*

# Malaysia in the MedTech value chain

## Snapshot: Straits Orthopedics (2/2)

### Supply chain map




### Key activities

- **Machining**: Precision milling, turning, and grinding
- **Surface Treatment**: Electropolishing, anodizing, passivation
- **Sterilization**: Gamma sterilization in cleanroom environments
- **Assembly & Kitting**: Customization of surgical sets
- **Packaging**: Non-sterile and sterile packaging solutions
- **Distribution**: Global delivery to OEM clients

**Goal**
To be a one-stop center for their client while minimizing outsourcing services

# Malaysia in the MedTech value chain

## Snapshot: SAM Engineering & Equipment (1/3)

**Company profile**

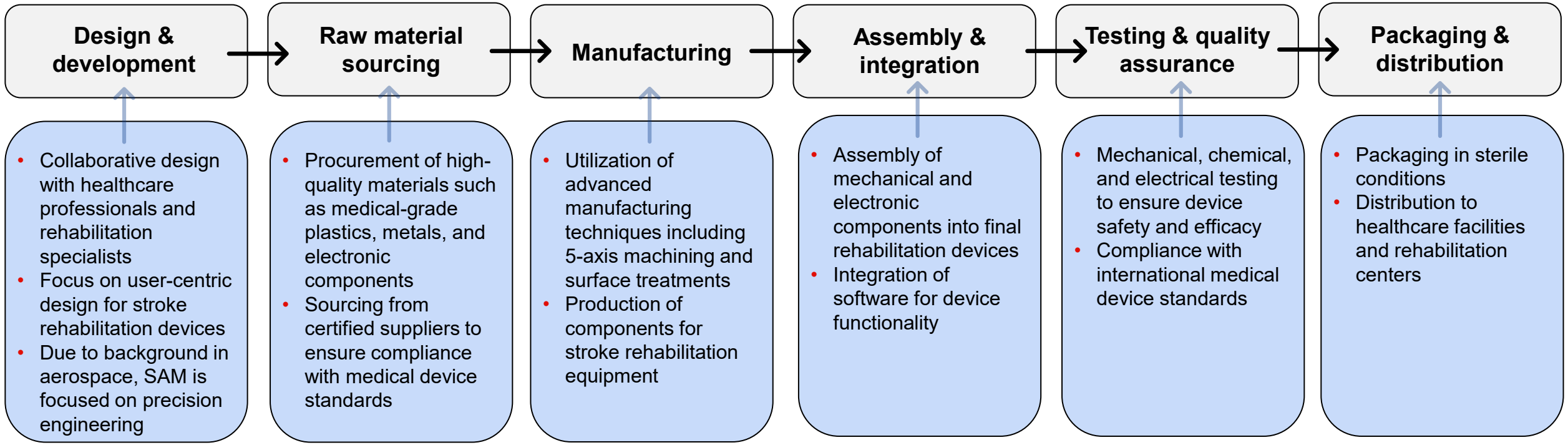
- **Founded:** 1994
- **Headquarters:** Bayan Lepas, Penang, Malaysia
- **Stock Exchange:** Listed on Bursa Malaysia (KLSE: 9822)
- **Annual Revenue:** Approximately $314 million USD
- **Ownership:** Majority-owned by Singapore Aerospace Manufacturing Pte Ltd
- **Facilities:** Manufacturing sites in Malaysia, Singapore, and Thailand
- **Core Competencies:** Precision machining, sheet-metal fabrication, surface treatment, equipment integration, and automation solutions

*The following slides provide an overview of the supply chain and suppliers of Sam Engineering & Equipment, focusing on their stroke rehabilitation equipment and potential collaboration with Dutch MRI and X-ray manufacturers*

# Malaysia in the MedTech value chain

## Snapshot: SAM Engineering & Equipment (2/3)

### Supply chain map




### Key activities

- **Precision machining:** High tolerance components for electromechanical systems
- **Electronics integration:** Incorporation of PCBs, sensors, feedback motors
- **Software integration:** Embedded software for motion tracking, rehabilitation monitoring
- **Product and stress testing:** Lifecycle and stress testing, compliance validation
- **Sterile packaging:** Custom packaging for clinical/outpatient use

**Goal**
Will focus more on the MedTech sector and less on semicon and aerospace

# Malaysia in the MedTech value chain

## Snapshot: SAM Engineering & Equipment (3/3)

**Potential collaboration with Dutch MRI & X-ray Manufacturers**

- Objective is to explore partnerships with Dutch companies specializing in MRI and X-ray technologies to enhance stroke rehabilitation equipment

**Potential areas of collaboration**

- Integration of imaging technologies for real-time monitoring of patient progress
- Development of combined diagnostic and therapeutic devices
- Joint research and development initiatives

**Potential benefits**

- Access to advanced imaging technologies
- Expansion into European healthcare markets
- Enhanced product offerings for comprehensive stroke rehabilitation

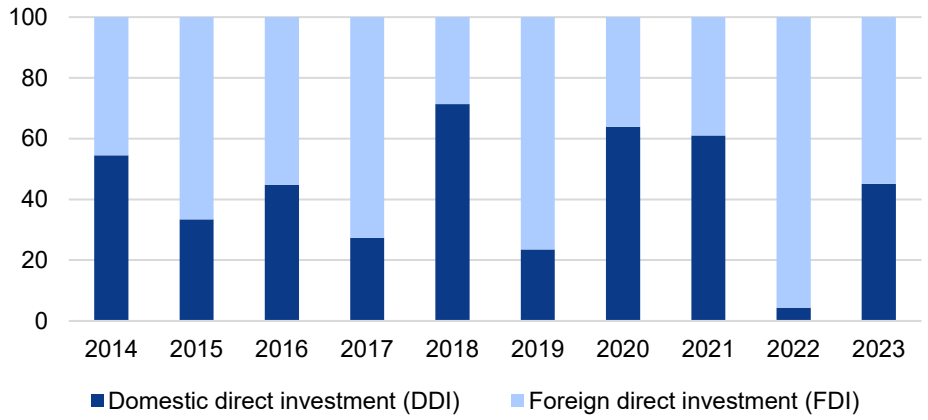
This supply chain structure ensures that SAM Engineering delivers high-quality stroke rehabilitation equipment, with a focus on precision, safety, and efficacy. The potential collaboration with Dutch MRI and X-ray manufacturers could further enhance the capabilities of these devices, offering integrated solutions for stroke recovery

# Local vs multinational companies in Malaysia

**Malaysia benefits substantially from foreign direct investment (FDI) in the medical device sector, with Penang attracting 10 global leaders**

- While domestic direct investment (DDI) has increased over five-year periods, its annual figures are inconsistent, showing significant spikes during the pandemic-driven demand for consumables
- FDI is recognized as a crucial catalyst for DDI, with local entrepreneurs often gaining experience from MNCs before establishing their own ventures, mirroring trends in the electronics and electrical (E&E) industry in Malaysia
- DDI has doubled from the 2014-2018 period to the 2019-2023 period; however, the percentage of DDI compared to total investment has remained relatively stable, hovering around 43-46%

**Share of approved investments (%)**




**Approved investments (x billion RM)**

| Year | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|---|---|---|
| DDI | 1.20 | 0.603 | 1.30 | 0.60 | 1.50 | 0.934 | 3.90 | 4.70 | 0.20 | 0.985 |
| FDI | 1.00 | 1.20 | 1.60 | 1.60 | 0.60 | 3.04 | 2.20 | 3.00 | 4.50 | 1.20 |

# Production characteristics of MNCs

**In Malaysia's MedTech sector, multinational corporations (MNCs) primarily engage in low volume, high value and high complexity production**

### Production Volume and Value

- MNCs typically focus on low to medium volume manufacturing runs due to the specialized nature of medical devices.
- The products are often high value, reflecting advanced technology, precision engineering, and strict regulatory compliance.

### Level of Complexity

- The production involves highly complex components and assemblies such as implantable devices (e.g., pacemakers), diagnostic equipment, and sophisticated medical instruments.
- Processes require stringent quality control, advanced automation, cleanroom environments, and compliance with international standards (e.g., ISO 13485).

### Focus Areas

- Emphasis on research and development (R&D), prototyping, and final assembly rather than mass production of simple products.
- Many MNCs use Malaysia as a hub for regional manufacturing and supply chain operations targeting high-tech MedTech markets globally.

# Challenges in the Malaysian MedTech sector

**Regulatory Complexity and Compliance**

- Navigating stringent regulatory frameworks with evolving standards
- Lengthy approval timelines affecting product time-to-market
- Limited harmonization with international regulatory bodies

**Market Access and Adoption Barriers**

- Challenges in penetration of both domestic and export markets
- Limited awareness and acceptance among healthcare providers and patients
- Reimbursement and pricing pressures impacting product viability

**Limited R&D Investment and Innovation Capacity**

- Insufficient funding for research and development initiatives
- Gaps in advanced technological expertise and innovation ecosystems
- Dependency on imported technology and components

**Infrastructure and Supply Chain Limitations**

- Underdeveloped manufacturing and testing infrastructure
- Supply chain disruptions and reliance on global suppliers

**Talent Shortage and Skill Gaps**

- Deficit of specialized professionals in biomedical engineering and regulatory affairs.
- Need for continuous upskilling to keep pace with global advancements

# SWOT analysis – Malaysian MedTech

**Strengths**

- Largest MedTech market & talent pool in ASEAN
- Over 300 MedTech firms; >90% export-based
- Mature precision engineering & E&E ecosystem
- Strong government support and industrial parks
- Presence of global MNCs (e.g., B. Braun, Abbott)

**Weaknesses**

- Limited domestic innovation & R&D investment
- Regulatory approval process still seen as slow
- Underdeveloped private-label & full-service CMOs
- Skills gaps in biomedical engineering & QA/RA
- Limited high-end component manufacturing locally

**Opportunities**

- Regional hub for SEA & “China+1” diversification
- Synergies with Dutch tech in mechatronics, robotics
- Adoption of Industry 4.0 & AI/automation in MedTech
- Growing healthcare demand, aging population
- Export-driven with scope for private-label expansion

**Threats**

- Rising competition from other ASEAN markets (e.g., Vietnam)
- Global Minimum Tax may affect FDI appeal
- Supply chain disruptions and raw material dependencies
- Dependence on foreign MNCs for innovation drivers
- Talent shortage may hinder advanced manufacturing scaling

# How do global events impact the MedTech ecosystem?

### COVID-19 Pandemic

- Disrupted global supply chains, exposing vulnerabilities in sourcing and logistics
- Accelerated demand for local manufacturing capabilities and supply diversification
- Increased focus on digital health technologies and remote patient monitoring solutions

### China+1 Strategy

- Encouraged diversification of supply chains beyond China to mitigate geopolitical risks
- Presented opportunities for Malaysia to attract MedTech manufacturing investments
- Challenges include ramping up local infrastructure and regulatory alignment to capture new business

### US-China Trade Tensions and Trump-era Tariffs

- Heightened costs and complexities for MedTech imports and exports due to tariffs
- Prompted companies to reconsider supply chain strategies, favoring alternative regional hubs like Malaysia
- Increased need for agility, stability, and adaptability in procurement and production processes

# Upcoming MedTech related exhibitions in Malaysia

**Malaysia Medtech Summit**
1–2 October 2025
G Hotel, Penang

**MIH Megatrends,**
25–27 November 2025
KL Convention Centre
(Theme: Innovating for a Healthier Sustainable Future)

**APHM International Healthcare Conference & Exhibition 2025**
9–11 June 2025
Convention Centre (KLCC)

**IHW 2025 (International Wellness Expo)**
16–18 July 2025
MITEC

# 6 MedTech Ecosystem in the Netherlands

**The following pages provide an overview of the MedTech ecosystem in the Netherlands**

- The focus is not only on direct MedTech companies/activities but also on high-tech and advanced manufacturing activities which contribute to the MedTech value chain
- These activities include Dutch advanced manufacturing companies with competences in mechanical, mechatronics and optomechatronics

**There are more than 3,000 research organizations in MedTech and life sciences in the Netherlands**

- Ranked the 2nd country in Europe for both the export and import of medical devices
- Ranked 8th country worldwide for patents in health and life science sectors
- More than €2 billion is invested in health-related R&D each year within the country (top-5 in Europe)

# Dutch MedTech ecosystem

## Key stakeholders

### Universities & research institutes

TNO innovation for life
imec
UTRECHT SCIENCE PARK INNOVATIONLAB
DIFFER
Holst Centre Powered by imec & TNO
SOLLIANCE SOLAR RESEARCH
UNIVERSITY OF TWENTE.
TU Delft Delft University of Technology
BRAINPORT EINDHOVEN
TU/e EINDHOVEN UNIVERSITY OF TECHNOLOGY

### Advanced manufacturing companies

*(OEMs, suppliers, etc.)*

PHILIPS
CEAD
NTS
VDL
ASM
ASML
tomtom
TATA STEEL
signify
SIOUX TECHNOLOGIES
NXP
Gimmi
DAF
Technobis HIGH TECH SOLUTIONS
Bronkhorst®
EMERSON

### MedTech companies

GE HealthCare
TOSHIBA
sanofi aventis Because health matters.
FEI part of Thermo Fisher Scientific
SIEMENS
astellas
AMGEN
Panasonic
Janssen
MSD
Abbott
FUJIFILM
ThermoFisher SCIENTIFIC
Boston Scientific
AstraZeneca
B BRAUN
Medtronic
genzyme
AGFA HealthCare
HITACHI Inspire the Next
NOVARTIS
stryker
aspen HOLDINGS

### Dutch-owned MedTech companies

XILLOC Patient Specific Implants
POLYGANICS
DSM
HEALTH PLUS.AI
Confocal nl
LUMICKS
PHILIPS
CAVEX
sigmascreening
easee
DELFT IMAGING

# Dutch MedTech ecosystem

## Industry-academia cooperation

**The Dutch MedTech sector has well-developed industry-academia cooperation through the frameworks of a quadruple helix based on the cooperation between universities, companies, governments and the civil sector**

- Dutch university-linked science and innovation campuses provide prime collaborative environments. For example, high-tech Campus Eindhoven fosters innovation with over 220 companies and 12,000 researchers driving future innovation
  - The campuses foster collaboration among collocated researchers, hospitals and companies allowing for cross-pollination of MedTech-related knowledge
- The country's university medical centers are often collaborating with the industry resulting in more innovation in the sector that is also based on "real-world healthcare demand"
- The MedTech sector enjoys the strategic position in the Dutch economy through the "Topsector Life Sciences & Health" government support program
- MedTechNL, formed as national public-private initiative,  is the key enabling actor of the MedTech sector

**There are over 300 public-private partnerships in Dutch Medtech sector**

# Dutch MedTech ecosystem

## Talent

**There are 26 campuses, 15 science and innovation parks, eight university medical centers and 13 universities focused on life science research**

- Three of the prominent technical universities – TU Delft, TU Eindhoven, and TU Twente – are significant producers of STEM graduates, particularly in mechatronics and optomechatronics, and are at the forefront of high-tech application development within strong regional tech ecosystems.
- Companies are frequently setting up recruitment events with local universities in order to headhunt MedTech talent.
- The Netherlands is also successful in attraction international healthcare and medical talent into the country.

**+21,000 employees in health-related R&D in the Netherlands**

**+14,000 people directly employed in the MedTech industry**

**As of 2023, the Dutch high-tech industry employes nearly 500,000 people**

**The Netherlands ranks 4th globally in MedTech patent applications**

# Dutch MedTech ecosystem

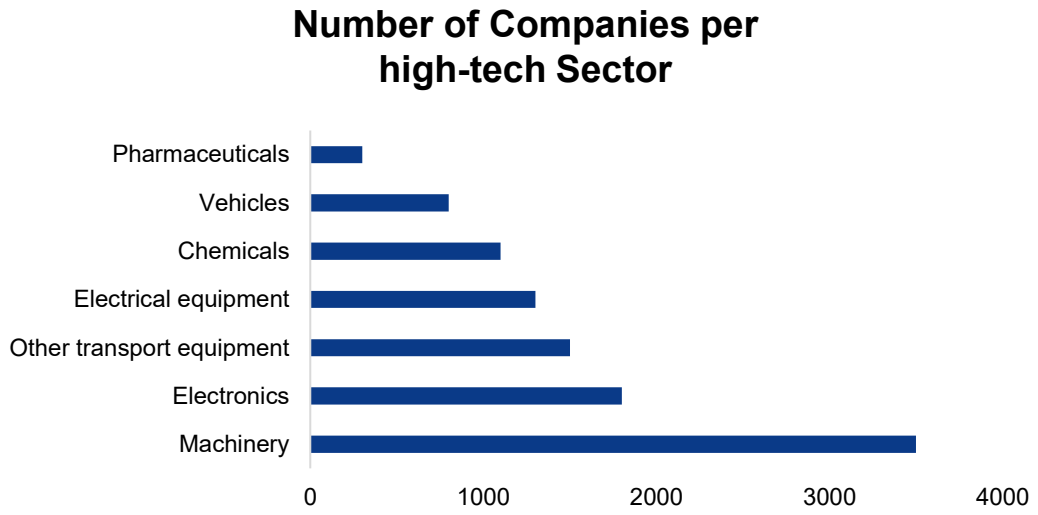
## Advanced manufacturing

**The Dutch government categorizes all advanced ('smart') manufacturing as high-tech Systems and Materials (HTSM), which is one of the top sectors that the Dutch government promotes as a driver of the economy**

- There are ~10,300 high-tech manufacturing companies in the Netherlands, with most active in machinery (ASML) and electronics (NXP).
- The Dutch high-tech manufacturing sector, while representing a modest 6% of GDP and under 4% of total employment, exhibits notable resilience and increasing significance within the national manufacturing landscape.
- Despite its limited job creation, the sector provides highly compensated employment, offering wages 50% higher than those in the service and general manufacturing sectors.

**High-tech manufacturing sectors**

- Machinery
- Electronics
- Other transport equipment
- Electrical equipment
- Chemicals
- Vehicles
- Pharmaceuticals



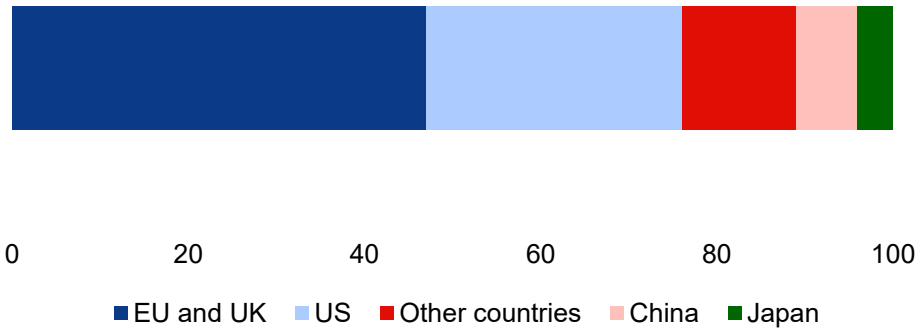
# Dutch MedTech ecosystem

## Domestic vs foreign-owned companies

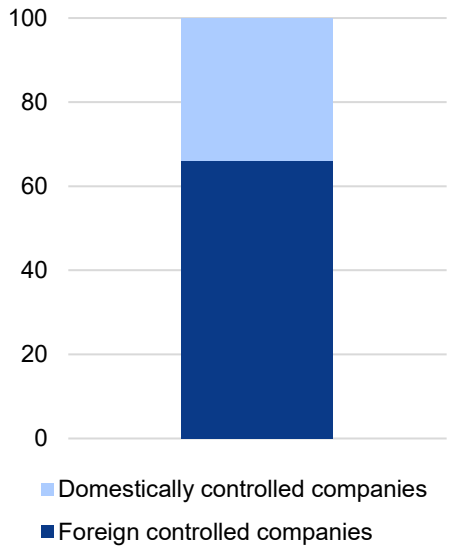
**Foreign-owned companies make up ~9% of Dutch high-tech companies**

- This figure has only modestly increased since 2010
- A majority of the foreign-owned high-tech companies come from other European Union (EU) member countries, the UK or the US
- Foreign-controlled high-tech manufacturing companies made up approximately 66% of total revenue, and just under 30% of R&D expenditure

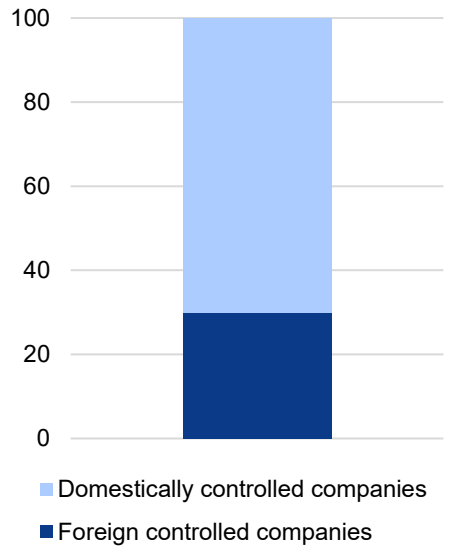
**Share of foreign-owned manufacturing companies by country**




**Revenue by ownership structure**




**R&D expenditure by ownership structure**



# Dutch MedTech ecosystem

## Suppliers to advanced manufacturing (1/2)

| Segment | Example companies |
|---|---|
| Materials & surface treatment | • Mevi Surface Treatment<br>• Aalberts Surface Technologies<br>• LOA Group<br>• Surface Treatment Nederland<br>• FMI Instrumed |
| Electronics & embedded systems | • Prodrive Technologies<br>• Demcon<br>• Connect Group<br>• Boers & Co<br>• 3T |
| Optical components & systems | • Nedinsco<br>• Photonis<br>• Dutch Medical Devices (DMD)<br>• Anteryon |
| Mechatronics | • Prodrive Technologies<br>• Demcon<br>• AAE<br>• Kendrion<br>• Boers & Co |
| Precision mechanics & machining | • Demcon<br>• AAE<br>• Tegema<br>• Boers & Co<br>• Settels Savenije Group<br>• PM |

# Dutch MedTech ecosystem

## Suppliers to advanced manufacturing (2/2)

**Materials and surface treatment**

- **Mevi Surface Treatment** offers specialized surface treatments, including biocompatible coatings for medical implants and devices. Their coatings enhance biocompatibility and improve the durability of medical devices
- Several companies which provide medical grade stainless steel, titanium and polymers

**Precision mechanics and machining**

- **KMWE Group** provides high-precision machining and assembly of components used in medical devices, including surgical instruments and implants . Their precision is critical for creating components that meet stringent medical tolerances

**Optical components and systems**

- **PhotonDelta** is an ecosystem of organizations researching, designing and manufacturing photonic integrated circuits (PICs). This organization is a network of suppliers, not a single company

**Mechatronics**

- **Festo** provides pneumatic and electric automation technology, including actuators, valves and control systems

# Dutch MedTech ecosystem

## Mechatronics & optomechatronics

**ASML**

- They design and manufacture extremely complex lithography systems. These systems are the pinnacle of optomechatronics, combining ultra-precise mechanical movements with advanced optical technologies
- Their machines rely on highly accurate motion control, advanced sensors, and sophisticated optical systems

**NTS**

- NTS is a first-tier system supplier specializing in mechatronics. They develop and assemble complex mechatronic modules and systems for various industries, including semiconductor, medical, and analytical
- They are heavily involved in precision mechanics, motion control and system integration

**VDL ETG**

- Focuses on the development and manufacturing of high-tech systems and modules, with a strong emphasis on mechatronics
- They provide contract manufacturing and engineering services for a wide range of applications, including semiconductor, MedTech and scientific instrumentation

**Technobis Fibre Technologies**

- This company focuses on integrated photonics, and therefore heavily relies on optomechatronics. They create photonic integrated circuits and related systems

**Sioux Technologies**

- Sioux provides high-tech development and production services. They have a strong focus on embedded systems, software and mechatronics
- They work on a variety of high-tech projects, and within these projects often use optomechatronic principles

**Hittech BV**

- Hittech BV specializes in the development and manufacturing of high-precision mechatronic and optomechatronic systems for industries such as semiconductors, medical technology, and scientific instrumentation
- They provide integrated solutions combining mechanical, electronic, and optical components, with a strong focus on engineering excellence and system performance

# Dutch MedTech ecosystem

## Additive manufacturing

**The Netherlands, particularly the Eindhoven region, is a hub for high-tech industries. This creates opportunity for additive manufacturing (AM) which is typically used for producing complex, high-precision components**

### Key applications in MedTech

- **Personalized implants/prosthetics** – Additive manufacturing allows for the creation of customized implants and prosthetics tailored to individual patient anatomy. This is particularly valuable in orthopedic and dental applications
- **Surgical instruments/tools** – 3D printing enables the rapid prototyping and production of specialized surgical instruments and tools
- **Medical device prototyping** – AM is widely used for rapid prototyping of medical devices, allowing for faster development cycles and reduced time to market
- **Innovative materials** – Such as biocompatible materials

**Additive Industries**

- Their metal 3D printing systems are used in the production of high-performance medical devices

**FMI Medical**

- This company uses 3D metal printing to manufacture products such as surgical implants

**TNO**

- TNO is heavily involved in research and development related to additive manufacturing for medical applications

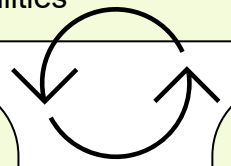
# Value proposition of the Dutch MedTech ecosystem

**The Netherlands offers a uniquely integrated and innovation-driven environment for MedTech companies to develop, test, and scale next-generation healthcare technologies**

**Strategic innovation hub**
- Anchored by a quadruple helix model: seamless collaboration among academia, industry, government, and civil society.
- Home to 26 innovation campuses and 15 science parks that promote high-impact R&D

**Advanced manufacturing excellence**
- Over 10,000 high-tech manufacturing firms, including global leaders like ASML and NXP
- High value-added sector offering premium employment and critical system integration capabilities

**Robust supply chain ecosystem**
- Deep network of suppliers specializing in biocompatible materials, precision mechanics, electronics, and optical systems.
- Dense supplier base enables rapid prototyping, scaling, and customization



**Public-private synergy**
- Strong government backing through Topsector Life Sciences & Health and initiatives like MedTechNL.
- Emphasis on healthcare-driven innovation ensures relevance and adoption in clinical settings

**World class talent pipeline**
- Leading technical universities (TU Delft, TU Eindhoven, TU Twente) drive innovation in mechatronics and optomechatronics.
- Strong domestic and international recruitment ensures a continuous flow of skilled MedTech professionals

# 7 Potential synergies in MedTech

## Revealed Comparative Advantage (RCA) Index

- The RCA index is a measure used to determine a country's relative advantage or disadvantage in the export of a particular good or service compared to the global average
- The RCA index is used to assess Malaysia's relative export performance in specific MedTech segments compared to the global market
- By identifying areas where Malaysia exports more intensively than the world average, the RCA helps highlight sectors where the country holds a competitive edge and potential for further development

**RCA > 1**

- The country is said to have a revealed comparative advantage in that specific product
- This suggests that the country exports a higher proportion of said product than the world as a whole
- Indicates a relative strength in that product's production and export

**RCA = 1**

- The country's export share of the product is equal to the world's average

**RCA < 1**

- The country is said to have a revealed comparative disadvantage in a product
- This suggests that the country exports a lower proportion of said product than the world average

*Source: UN Trade and Development Organization, 2025*

# RCA index – Malaysia & the Netherlands (1/4)

| Product SITC | Product name |
|---|---|
| 776 | “Cathode valves & tubes” |

| Revealed comparative advantage (RCA) | |
|---|---|
| Malaysia | the Netherlands |
| 5.8 | 0.3 |

## Application in MedTech

| Category | Products | Example companies |
|---|---|---|
| Medical imaging | • Cold X-ray machines<br>• CT scanners<br>• Mammography machines | • Vatech*<br>• Escatec*<br>• Ray Tech<br>• Canon Medical |
| Lab equipment | • Electron microscopes<br>• Mass spectrometers | • Escatec*<br>• JEOL<br>• Hitachi High-tech |

*Malaysian-owned companies

- There is a high share of foreign-owned multinational corporations in this domain in Malaysia

# RCA index – Malaysia & the Netherlands (2/4)

| Product SITC | Product name |
|---|---|
| 874 | "Measuring, analyzing and controlling apparatus, n.e.s" |

| Revealed comparative advantage (RCA) | |
|---|---|
| Malaysia | the Netherlands |
| 2.5 | 0.9 |

## Application in MedTech

| Category | Products | Example companies |
|---|---|---|
| Lab instruments | • Spectrometers<br>• Chromatographs<br>• pH meters<br>• Other analytical instruments | • Hanna Instruments*<br>• ESKG |
| Patient monitoring | • Capnography devices<br>• Blood pressure monitors<br>• Infusion pump controllers | • ESKG |
| Medical device calibration | • Multi-function calibrators<br>• Precision meters<br>• Safety testers for medical devices | • KKInstruments*<br>• Braun |

*Malaysian-owned companies

- There is a solid number of foreign-owned multinational corporations in this domain in Malaysia

# RCA index – Malaysia & the Netherlands (3/4)

| Product SITC | Product name |
|---|---|
| 772 | "Apparatus for electrical circuits; boards; panels" |

| Revealed comparative advantage (RCA) | |
|---|---|
| Malaysia | the Netherlands |
| 1.2 | 0.4 |

## Application in MedTech

| Category | Products | Example companies |
|---|---|---|
| Circuit breakers | • MRI systems<br>• Chromatographs<br>• PH meters | • Mittric*<br>• Fortune Electrical*<br>• Terasaki Electric |
| Circuit panels | • Capnography devices<br>• Blood pressure monitors<br>• Infusion pump controllers | • TS Electrical*<br>• WEM*<br>• M.B. Automation* |
| Circuit boards | • Multi-function calibrators<br>• Precision meters<br>• Safety testers for medical devices | • Elna PCB*<br>• APC*<br>• Cosmowave*<br>• JLS<br>• Seki Aoi |

*Malaysian-owned companies

- There is a high share of foreign-owned multinational corporations in this domain in Malaysia

# RCA index – Malaysia & the Netherlands (4/4)

| Product SITC | Product name |
|---|---|
| 848 | “Articles of apparel and clothing accessories, excluding textile articles” |

| Revealed comparative advantage (RCA) | |
|---|---|
| Malaysia | the Netherlands |
| 5.6 | 0.7 |

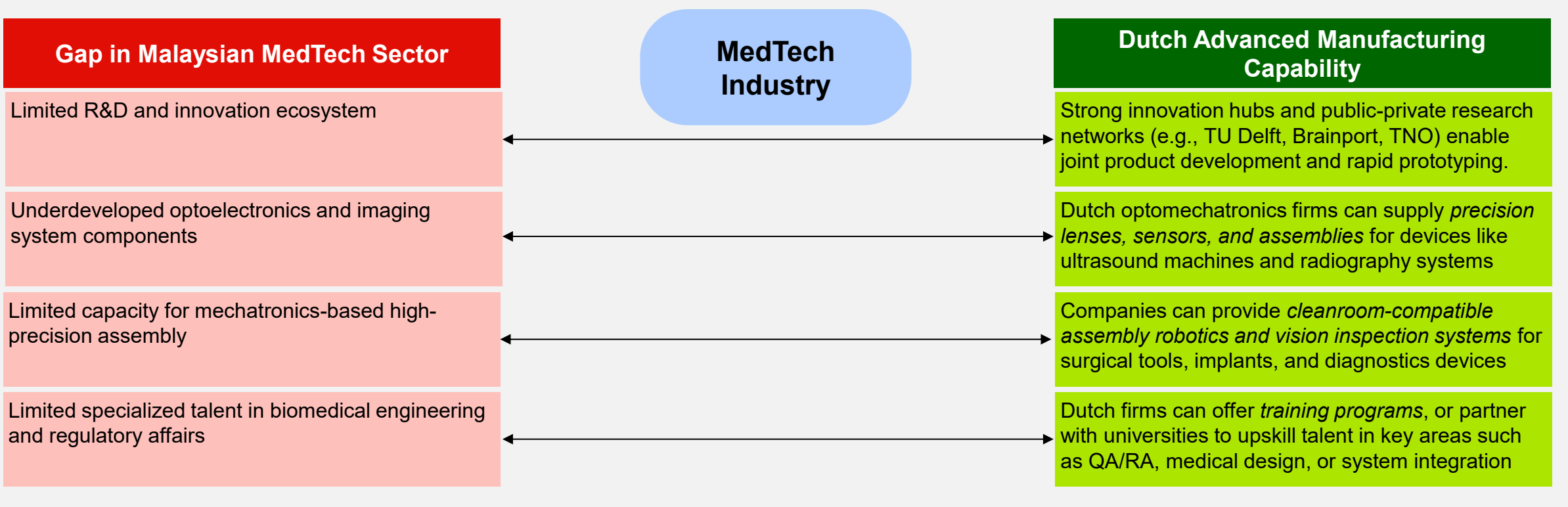
## Application in MedTech

| Category | Products | Example companies |
|---|---|---|
| Disposable wearable medical items | • Gloves<br>• Aprons<br>• Caps and covers | • Top Glove Corporation*<br>• Kossan*<br>• Hartalega* |
| Plastic PPE items | • Specialized bags<br>• Specimen containers<br>• Sealable pouches | • VitalFour Medical*<br>• Muzamal Industries*<br>• Safetyware Group* |
| Protective garments | • Radiation shielding<br>• Protective covers and shields | • Accentrix*<br>• Safetyware Group*<br>• Infab Corporation |

*Malaysian-owned companies

- Malaysian-owned companies make up the vast majority of producers in this domain

# 8 Unlocking Opportunities for Dutch Companies in Malaysia



# Classification of opportunities

| Type | Opportunity | R&D / Design | Component / Material | Assembly / Sterilization | Digital / Smart Systems | Indication of opportunity scale | Remarks / examples |
|---|---|---|---|---|---|---|---|
| **A. Strategic Partnerships & Integration** | | | | | | | |
| **A1** | Partner with local contract manufacturers (CMOs) | ✓ | ✓ | ✓ | | ● | • Leverage strong Malaysian base for assembly & sterilization; fill full-service CMO gap |
| **A2** | Collaborate with system integrators | | ✓ | ✓ | ✓ | ● | • Joint development of test automation, AI, robotics, etc. with system integrators like Greatech, Pentamaster |
| A3 | Co-develop with R&D institutes | ✓ | ✓ | | ✓ | ◔ | • Focus on AI robotics, smart surgical systems, eligible for incentives (FIAF) |
| **B. Market Entry & Facility Expansion** | | | | | | | |
| B1 | Establish local manufacturing facility | ✓ | ✓ | ✓ | ✓ | ● | • Utilize tax incentives, FTZs; proximity to ASEAN market |
| B2 | Local acquisition of MedTech or automation firms | ✓ | ✓ | ✓ | | ◑ | • Buy firms for instant supply chain and regulatory access<br>• EU tech scaling |
| B3 | Invest in shared infrastructure | ✓ | ✓ | ✓ | | ◑ | • Shortens time-to-market for Dutch OEMs & system builders |
| **C. Contracting & Outsourcing** | | | | | | | |
| C1 | OEM/ODM contracting with Malaysian CMOs | | ✓ | ✓ | | ◔ | • Ideal for scaling production of precision components or sub-assemblies |
| **C2** | Contract packaging, kitting, and sterilization | | | ✓ | | ◔ | • Partner with specialists (e.g., SteriPack) to complete device lifecycle |
| **D. Tech Transfer & Specialization** | | | | | | | |
| D1 | Supplier development and localization | | ✓ | ✓ | | ◔ | • Help raise Malaysian SME capabilities |
| D2 | Supply biocompatible materials / coatings | | ✓ | | | ◑ | • Dutch firms can provide specialty inputs |

# Strategies for market penetration (1/2)

**Strategic partnerships (reducing supplier dependency)**

- Form alliances with Malaysian technology firms, contract manufacturers, or engineering service providers to internalize critical components and reduce reliance on external suppliers.
- Partner with local toolmakers, automation integrators, or packaging solution providers to embed key capabilities within the value chain.
- Co-invest in shared infrastructure (e.g., cleanrooms, labs) to secure critical production capacity and shorten lead times.

**Local acquisition**

- Acquire established Malaysian MedTech or precision engineering firms to gain immediate market access, operational capabilities, and regulatory approvals.
- Target acquisitions with upstream or downstream integration potential to consolidate control over critical supply chain elements.
- Use acquisitions as a platform to regionalize EU-developed technologies and scale through local customization.

**Co-development initiatives**

- Partner with Malaysian R&D institutions to co-develop medical devices tailored to regional healthcare needs.
- Leverage government R&D incentives and IP co-ownership to reduce time-to-market.

**Contract manufacturing**

- Utilize Malaysia’s advanced manufacturing capabilities for cost-effective and scalable production.
- Establish OEM/ODM relationships with ISO-certified Malaysian CMOs with strong regional distribution networks and experience in export and ready markets overseas.

# Strategies for market penetration (2/2)

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**Local facility establishment**

- Set up wholly-owned subsidiaries or manufacturing facilities in industrial free trade zones.
- Capitalize on tax incentives, skilled labor, proximity to ASEAN markets, and the current tariff of 24% to the US.

**Supplier sourcing & localization**

- Identify high-quality local suppliers for components, materials, or packaging to reduce costs and enhance supply chain agility.
- Conduct supplier audits to align with EU regulatory and quality standards.

**Alternative sourcing strategies**

- Develop a diversified supplier base to mitigate geopolitical, cost, and logistics risks.
- Integrate Malaysian suppliers into a multi-country sourcing model alongside existing EU or APAC suppliers.

**Regulatory alignment & market access**

- Work with local regulatory consultants to streamline Medical Device Authority (MDA) approval processes.
- Adapt product design and documentation to meet Malaysia's Medical Device Act 2012 and ASEAN Medical Device Directive (AMDD) compliance.

**Public-private engagement**

- Participate in government tenders and public-private partnerships (PPPs) to supply hospitals and clinics.
- Engage with national health programs targeting non-communicable diseases and aging population needs.

# 9 Key take aways

| | |
|---|---|
| Developing value chain in the region | • Malaysia plays a central role in the midstream MedTech value chain, with strengths in high-volume manufacturing, assembly, and sterilization<br>• The ecosystem is advancing toward higher-value devices and components, but upstream R&D and innovation remain limited |
| Strategic investment hub | • Key MedTech clusters provide regional access to ASEAN markets and an expanding base of multinational clients<br>• Competitive operating costs and attractive fiscal and regulatory incentives |
| Targeted opportunities for Dutch companies | • Strong demand for precision engineering, optomechatronics, and co-design capabilities to address gaps in high-tech components and advanced devices<br>• Dutch automation and system integration firms can lead in modernizing production through cleanroom robotics, traceability, and data-driven manufacturing |

# Annex

# Annex 1 – MIDAs Role in Investment

# Role of MIDA (1/2)

**The Malaysian Investment Development Authority (MIDA) plays a crucial role in promoting and facilitating investments in Malaysia, including supporting Research & Development (R&D) activities and Electronic Design Automation (EDA) tool access**

**R&D Tax Incentives**

**Pioneer Status and Investment Tax Allowance (ITA) for R&D**

- Pioneer Status (PS): Grants companies a 70% tax exemption on statutory income for 5 years for undertaking promoted R&D activities.
- Investment Tax Allowance (ITA): Companies can opt for an allowance of 50% of qualifying capital expenditure incurred within 10 years, which can be offset against 70% of statutory income.

**Contract R&D Company Incentive**

- Companies providing R&D services to third parties can apply for: 100% tax exemption of statutory income for 5 to 10 years, or ITA of 50% of qualifying capital expenditure for 10 years.

**In-House R&D Incentive**

- Companies carrying out R&D for their own business purposes may qualify for: 100% tax exemption of statutory income for 5 to 10 years, or ITA of 50% on qualifying expenditures.

**Double Deduction for R&D Expenditures**

- Approved R&D projects may be eligible for double deduction on approved R&D expenses, including wages, utilities, and materials.

# Role of MIDA (2/2)

**Additional Support Mechanisms**

- **R&D Status Application:** MIDA is the approving authority for companies seeking to obtain "R&D company" status, a prerequisite for many of the incentives.
- **One-stop Facilitation:** MIDA offers advisory services, helps navigate incentive applications, and connects companies to funding sources or technical partners.
- **Collaboration with MOSTI and MITI:** MIDA often works with the Ministry of Science, Technology and Innovation (MOSTI) and the Ministry of Investment, Trade and Industry (MITI) for funding alignment and policy support.

# Contact Information

# Contact information


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