MedTech CDMO ODA – Meiban

Mar 2025

DRAFT

BAIN & COMPANY

AGENDA

Initial perspectives and thesis

Asset overview

Market and competitive positioning

Potential scope and approach

Summary “outside-in” perspectives

PRELIMINARY OUTSIDE-IN PERSPECTIVES

What we like

- **MedTech is a highly attractive precision engineering segment** with macro tailwinds, sticky customer relationships, and long product lifecycles
- Meiban has **forged enduring blue chip customer relationship with ResMed** in MedTech
- **Value chain integration** on design / engineering and proprietary tech *(to be validated)* leading to customer stickiness
- **End-to-end capabilities**–from product design and tooling to high-volume manufacturing–which creates a differentiated value proposition for customers
- **Cost-effective scale** through manufacturing base in Malaysia coupled with innovation center supporting R&D and **advanced automation (Industry 4.0) adoption** in Singapore
- **Clear strategic exit opportunities** for precision engineering groups looking to enter coveted MedTech space

What gives us a pause

- **High concentration of economics** with major share of revenues coming from concentrated set of customers, mainly ResMed and Dyson; ability to sustain high margins in future depends on relationship with these customers and customer’s position vs. peers in market
- Operationally, **ability to scale up current capacity of 16 manufacturing sites** (CAPEX required, ability to scale utilization, supply chain performance)
- **Manufacturing focused on Singapore and Malaysia** and potentially exposed (favorably or unfavorably) to global supply chain shifts
- **Degree of differentiation on consumer business** and existence of barriers to margin erosion still remain unclear
- With any precision manufacturing diligence, key **to understand:**
  - **Truly addressable TAM** (given product focus/capabilities and manufacturing footprint) and potential for growth
  - **Long-range plan** and extent to which programs are secured / how target is performing on win-rates
  - **Customer perceptions and stickiness + sustainability of margins**

Hypothesis Deal Thesis For Meiban

/ HYPOTHESIS TO BE VALIDATED, FOR DISCUSSION

A Fundamentally attractive market w/ growing demand esp. in key segments

- Strong **fundamental growth profiles** of MedTech / Consumer electronics industries backed by macro tailwinds (defendable position in Consumer, higher growth validated in MedTech)
- Stable **outlook for CDMO industry** (clear value proposition towards customers, any macro shifts towards in-sourcing)
- Stable or **positive price and profitability outlook** (low risk of margin compressions) in key market segments
- Limited (or manageable) **risks of market disruption** (e.g. trade war, reimbursement risks for MedTech in key countries)

B Strong competitive and defensible position w/ key accounts

- MY / SG **macro stability as a CDMO location** (e.g. vs. other lower cost locations like CN)
- High **stickiness to switching** (e.g. friction to switching to other manufacturers esp. in MedTech)
- Evidence of growing **market share / share of customer** amongst key accounts and / or strong relationships (e.g. high stickiness of book, increasing share of wallet)
- **Competitive advantage** vs. other similar competitors in the APAC region
- Deep dives into ResMed & (to lighter extent – Dyson) given **outsized share of EBITDA**

C High confidence in management plan

- **Substantial and realistic** (i.e. formal purchase orders? Locked in contracts?) revenue growth potential from existing customers; pathway to economies of scale
- Overall attractive & pressure tested base case and upside
- **No red flags** on current plant and manufacturing capabilities
- **No obvious choke points to scale up volume** (i.e. growth scaling accounted for in business plan, performance on key KPIs & benchmarks, SLA & supply chain metrics, CAPEX requirements accounted for in plan

D Attractive upside from value creation levels

- **Expansion potential to other geos / close adjacent segments** (both product and customer level given current capabilities
- Hypothesis proven on various opportunities:
  - M&A of other CDMOs and synergies from the combined entities
  - Consumer electronic carve out
  - Others as identified in CDD

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Precision engineering player with MedTech contract mfg. capability; operates 16 sites with 3600+ staff members across Singapore, Malaysia, and China

MEIBAN BUSINESS OVERVIEW

Business description

Foundation: 1987

Ownership: **Private company** (de-listed 2012); owned by Zhong Yong Holdings; Dymon Asia PE holds stake in the company as well

HQ: Singapore

Description: Meiban is an **established EMS partner** catering to various industries, including **medical devices (ISO 13485 certified*), consumer electronics, and business equipment**

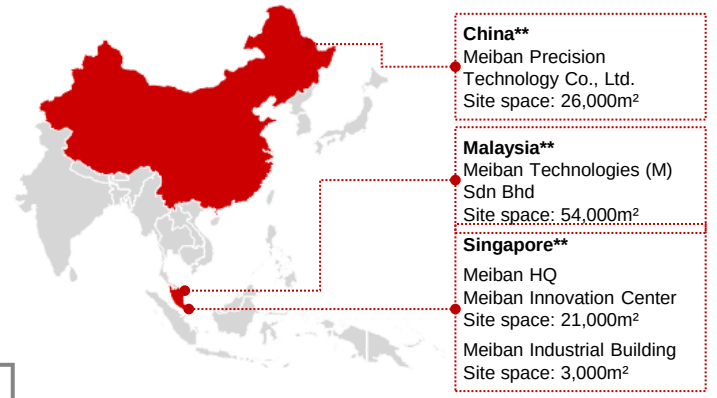
Business model:
- B2B contract manufacturer offering **turnkey manufacturing solutions**
- Derives revenue from **long-term agreements** or purchase orders with large original equipment manufacturers (OEMs)
- Serves a **concentrated set of key customers**, primarily **global MNCs** in its focus industries

Current employees: ~3600 (2025)

Geographic footprint

- **16 production sites** across Singapore, Malaysia and China
- ~300 plastic molding machines ranging from 15 to 850 tons in clamping force
- Holds **20+ patents** and design registrations

Including MedTech related patents for Method of Making Flexible Tubing with Embedded Wire Conductor, Conductive Fabric Medical Tube Using Conductive Ink, Fabric Weave on Flexible Plastic Tubing, etc.



Industries served

- Consumer Products
- **Medical**
- Clean Technology
- Automotive
- Energy Services
- Juvenile Products
- Storage Media & Business Equipment

Key anchor customers

dyson (consumer)

ResMed (med-tech)

Capability overview

Design & Engineering
(3D printing, Industrial design, mechanical design, UI/UX design, design for mfg.)

Electronic Manufacturing Services
(PCB assembly, SMT/ Non-SMT equipment, testing/ failure analysis, mfg. exec system.)

Software services
(Information architecture, design, implementation)

Mold making
(Computer numerical control, electrical discharge machining, in-house software)

Injection molding
(2k/3k molding, thermoset, cleanroom medical molding)

Contract manufacturing
(Usability & functionality test, manufacturing implementation)

iSmart factory
(Automation/ robotics, design for smart assembly, smart planning & logistics)

Innovative manufacturing tech
(Sequential Mold Technology (SMT), Maestro, Picco, Allegro, multi-level tech)

Other innovative capabilities
(Innovative Compression Molding Silicone Rubber (ICSMR), Innovative Smart Automation (ISA), Innovative Meiban Skin (IMS), Innovative Additive Manufacturing (IAM))

Note: (*) International quality standard for medical devices; **Key sites mentioned on the company website, not exhaustive
Source: Company website, company reports, Lit. search, Bain analysis

Capabilities with MedTech focus

Meiban has organically grown its footprint to 16 production sites

MEIBAN **BUSINESS TIMELINE**

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1987 Founded by Mr. George Goh Tiong Yong as a Singaporean injection molding company based in Eunos

2004 **Signed a JV with Dyson** to form Meiban-Dyson Laundry manufacturing Plant in Malaysia

2010 Established **Meiban Energy, a specialized subsidiary focusing on machining long products for the oil and gas industry**, with the launch of its first manufacturing facility in Malaysia to support its operations and expand presence in the sector

2012 **Delisted from the Singapore Exchange (SGX)** following the acquisition of its entire issued and paid-up share capital by Chairman and CEO Goh Tiong Yong through Zhong Yong Holdings

2016 Launched the **Meiban iSmart Factory Project**, an initiative **focused on integrating Industry 4.0 technologies into its manufacturing processes** (automation/ robotics, design for smart assembly, smart planning & logistics)

2018 Received strategic investment from **Dymon Asia Private Equity** to enhance capabilities, expand its market presence, and accelerate growth

2020 Opened a new subsidiary, **MB Medical & Healthcare** during the COVID-19 pandemic to **mass manufacture and sterilize the IM2 swabs under the AccuSwab brand**; Meiban Energy **consolidated its Singapore and Malaysia facilities into a new 90,000 sq. ft. facility in Johor, Malaysia**

2024 Currently operate 16 production sites across Singapore, Malaysia, and China catering to U.S. and European brand owners of consumer products, business equipment, medical devices etc.

Key sites*

Meiban HQ (Meiban Innovation Center)

Location: Singapore

Site space: 21,000m²

Meiban Industrial Building

Location: Singapore

Site space: 3,000m²

Meiban Technologies (M) Sdn Bhd

Location: Malaysia

Site space: 54,000m²

Meiban Technologies (Zhongshan)

Location: China

Site space: 26,000m²

Note: *Key sites mentioned on the company website, not exhaustive
Source: Company website, lit. search

Meiban generates a major share of revenue though its long-term contract manufacturing partnership with Dyson and ResMed

MEIBAN | KEY CUSTOMERS

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dyson x meiban

ResMed x meiban

Meiban has been in an active and dynamic manufacturing partnership with Dyson and ResMed since the 2000s

- The partnership first began in 2004, when Dyson teamed up with Meiban to gain **local production expertise** upon shifting manufacturing base to Malaysia to reduce costs
- Dyson began working with Meiban in Singapore to produce the motors for its products in 2007
- In 2019, Dyson relocated its **global headquarters** from the UK to Singapore – a strategic decision to **move closer** to its manufacturers, including **Meiban** to speed up product roll-outs in Asian markets and **enhance collaboration on R&D**
- Meiban gained additional production after Dyson severed its ties with ATA IMS, Malaysia over ESG concerns

- ResMed first teamed up with Meiban in 2009 to launch its Singapore manufacturing operations – a partnership driven by **ResMed's need to grow internationally** and **Meiban's** expertise in **injection molding and precision tooling**
- The **partnership & contract manufacturing** led to products such as the AirSense CPAPs, ClimateLine tubes & AirFit masks
- The partnership was advantageous for ResMed by enabling increased **growth** and **supply resilience**, while Meiban benefited through **financial stability**, business expansion & **diversification**
- Meiban's capacity & resource expansion in MedTech, can increase revenue share from **~ 20% today to 30–40% by 2030**

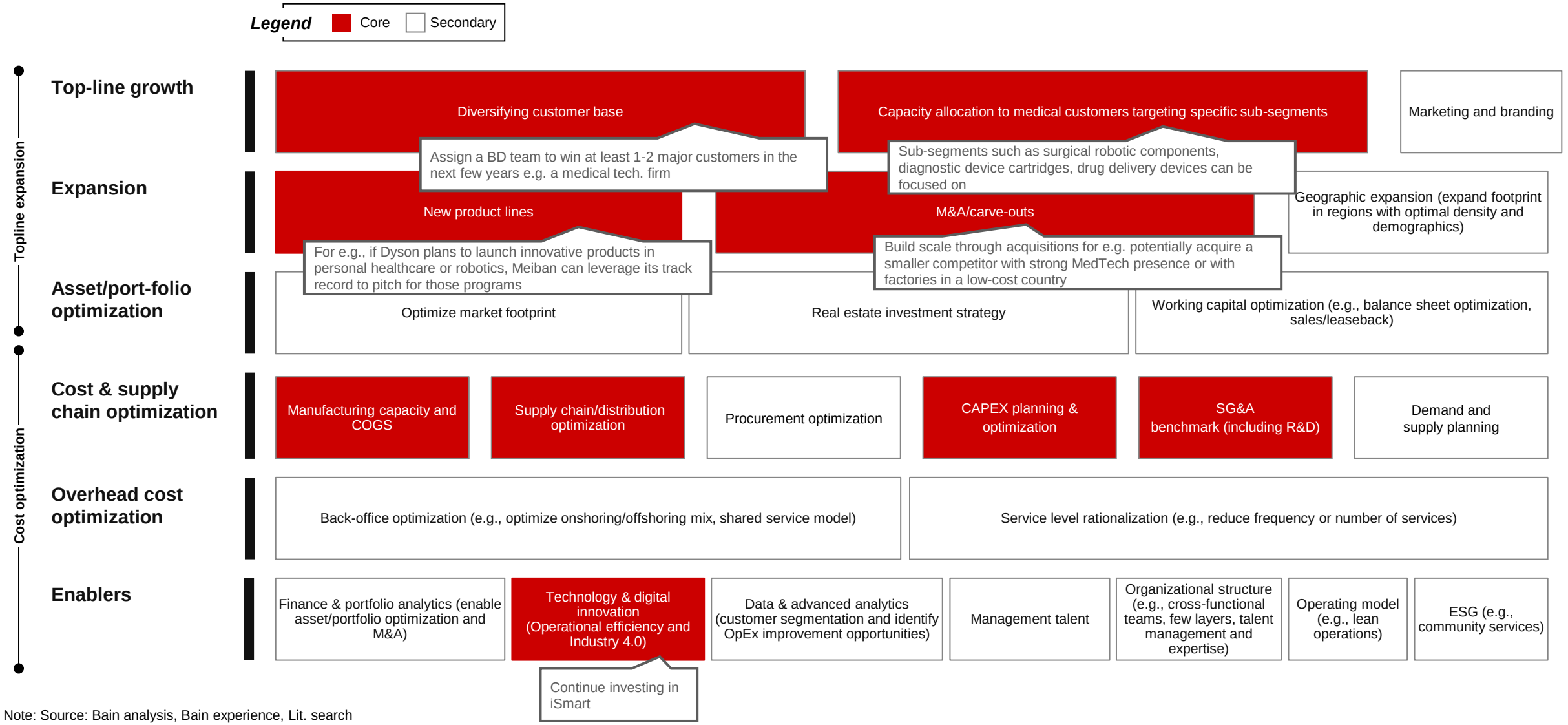
Meiban's strong relationship with Dyson and ResMed (anchor customers) provides revenue stability

Source: Company website, lit. search

Opportunity to grow by focusing on diversifying customer base, grabbing new contract for product lines of existing customers, and cost/ supply chain optimization

VC LEVERS

/DIRECTIONAL /OUTSIDE-IN PERSPECTIVE



Note: Source: Bain analysis, Bain experience, Lit. search

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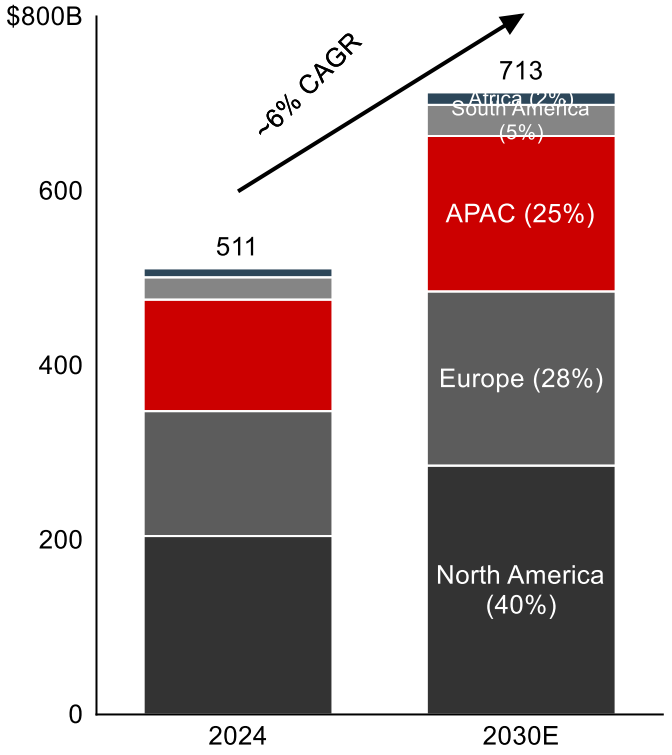
Growth in MedTech contract manufacturing is outpacing that of MedTech devices, driven by industry cost pressures and service provider improvements

MEDTECH MARKET SIZE

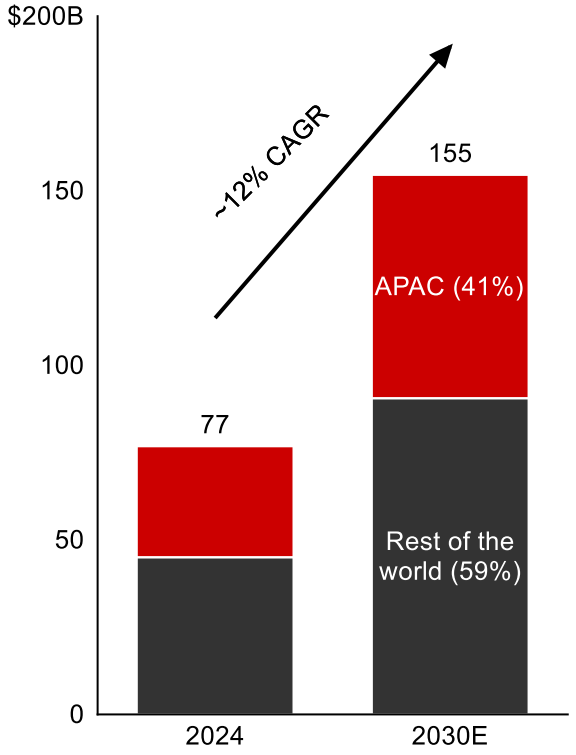
While MedTech devices is expected to grow by ~6% through 2030…

Global Medical Device Market ($B)



…MedTech contract manufacturing is expected to grow by ~12%….

Global MedTech Contract Manufacturing ($B)



…driven by cost, shorter development timelines, and improved capabilities

- **Rising cost pressures** are driving OEMs to increase outsourcing as a way of managing costs
- Increased customer **demand for rapid product innovation** is accelerating development timelines
- Service providers are **increasingly growing in sophistication** and building capabilities to serve large OEMs
- **OEMs are growing increasingly comfortable with outsourcing** as the industry moves up the adoption curve

"We are being pushed to outsource more and more at our company, with the increasingly fast timelines we realize we cannot meet them on our own."

- Market expert

Source: Nagarro, Grandview Research

CDMOs are benefiting from the end-market growth in demand for MedTech devices, but also from the increasing preference of OEMs to outsource

CDMO TRENDS

Drivers pushing MedTech companies (OEMs) to outsource

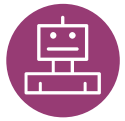
- **Pricing pressure** from customer (hospital) consolidation and increased sourcing sophistication
- Complex and evolving **regulatory requirements** (e.g., EU MDR)
- **Inconsistent utilization of resources** and functions due to product lifecycle (e.g., regulatory expertise)
- **Vendor consolidation** enabling more cost-efficient services and reliable quality standard
- **High capex and niche expertise** that med tech companies don't want to build in-house
- **International expansion** to emerging markets, requiring decentralized operations and understanding of consumer and regulatory landscape
- Emerging desire of OEMs to offer **value-added services** to customers (e.g., cath lab management)

Drivers for MedTech end-market volume growth

- **Aging populations expected to increase demand for MedTech devices,** with population aged 60+ is expected to reach ~2.1B by 2050, up from ~1.4B in 2020
  - The location of the world's aging population is significantly skewed towards geographies that are relevant markets for MedTech devices, increasing the relevance of this trend for the industry
- **Prevalence of cardiovascular diseases,** which already account for ~30% of deaths globally, **is expected to continue increasing,** in part due to the world's aging population
- **Prevalence, diagnosis and management of chronic diseases is expected to continue growing,** again in part due to the world's aging population
- Further, **innovation should continue to fuel growth,** primarily through the increase of **tech-enabled products and growth of homecare devices**

4 trends within MedTech are shaping the CDMO market, and driving growth

CDMO TRENDS

Key trend	Description	CDMO implication	Commentary from CDMOs
Shortened product life cycles 	• Medical product life cycles are shortening, making speed-to-market a key priority for OEMs	• Drives importance of closer alignment and deeper partnerships with OEMs	"*A key reason OEMs use CDMOs is because the CDMOs have much faster development timelines—development cycles for CDMOs are typically half as long as OEM's because of enhanced focus and expertise*"
Cost pressure 	• Cost pressures on OEMs are causing them to both outsource additional activities and rationalize their number of 3rd party vendors	• Increases CDMO adoption • Pushes CDMOs to offer a broader set of services / capabilities • Drives price pressure	*"Cost affects OEMs in how they deal with CDMOs. In the past they tried to operate their own equipment, but they're increasingly relying on CDMOs for this and focusing on their core competencies."*
Consolidation 	• Consolidation in the broader provider and payer ecosystem is causing OEMs to consolidate at a rapid pace to stay competitive	• Propels consolidation forward within highly fragmented CDMO industry, as players seek to achieve the scale needed to serve large OEMs	*"As more and more OEMs have approved vendor lists due to increasing regulation, consolidation is critical to gain access to RFPs as a CDMO."*
Technology / innovation 	• Advances in technologies (e.g., 3D printing, analytics, laser cutting) are driving OEM investments	• Improves appeal of CDMOs with advanced engineering capabilities and expertise	"*CDMOs invest in new technologies across the value chain because this is their core business. For many OEMS, manufacturing is not their competency, so they're less likely to make the capital outlay for the latest manufacturing technology*"

Source: Duff & Phelps Medical Device Manufacturing Update, Bain experience, Lit. Search

OEM outsourcing has historically been focused mainly on manufacturing activities, now seeing a shift towards outsourcing more of the value chain

COMPETITIVE DYNAMICS | VALUE CHAIN

Mid-to-high growth | High growth

	Pre-production		Manufacturing			Post-production			
	Product Design and Dev.	Regulatory & Testing	Sourcing	Component manufacturing	Assembly	Finished goods and sterilization	Packaging	Logistics	Other post-production
Share outsourced									
Growth potential									
Key activities	• Research for new products/ applications • Product design • Feasibility studied • New product introduction • Process engineering	• Clinical trials design and management • Regulatory submissions and approvals	• Supply chain management • Raw material sourcing • Component manufacturing and finishing – E.g., electronics, plastics molding, machined metal, ceramic coating, composites, etc. • Sub-assembly of components • Assembly of different sub-components to final device including electronics • Additional finishing processes • Quality control and testing – Inline/offline inspection, functional testing, specialized testing			• Final assembly – Combining sub-assemblies • Sterilization of finished goods	• Production of packaging materials • Labelling • Complete packaging	• Store finished goods and inventory mgmt. • Ship products to customers	• Service line mgmt. and support on-site for customers – E.g., OR, cath lab, care mgmt. • Sales outreach and support • Customer training/ edu. • Aftermarket service
CMO Archetype	**Category specialists**								
	Segment specialists								
	Strategic partners								

Source: Market participant interviews

OEMs choose CDMOs based on product stage, with technical expertise being key in the initial stages, and service range being more important in the later stages

COMPETITIVE DYNAMICS | DRIVERS

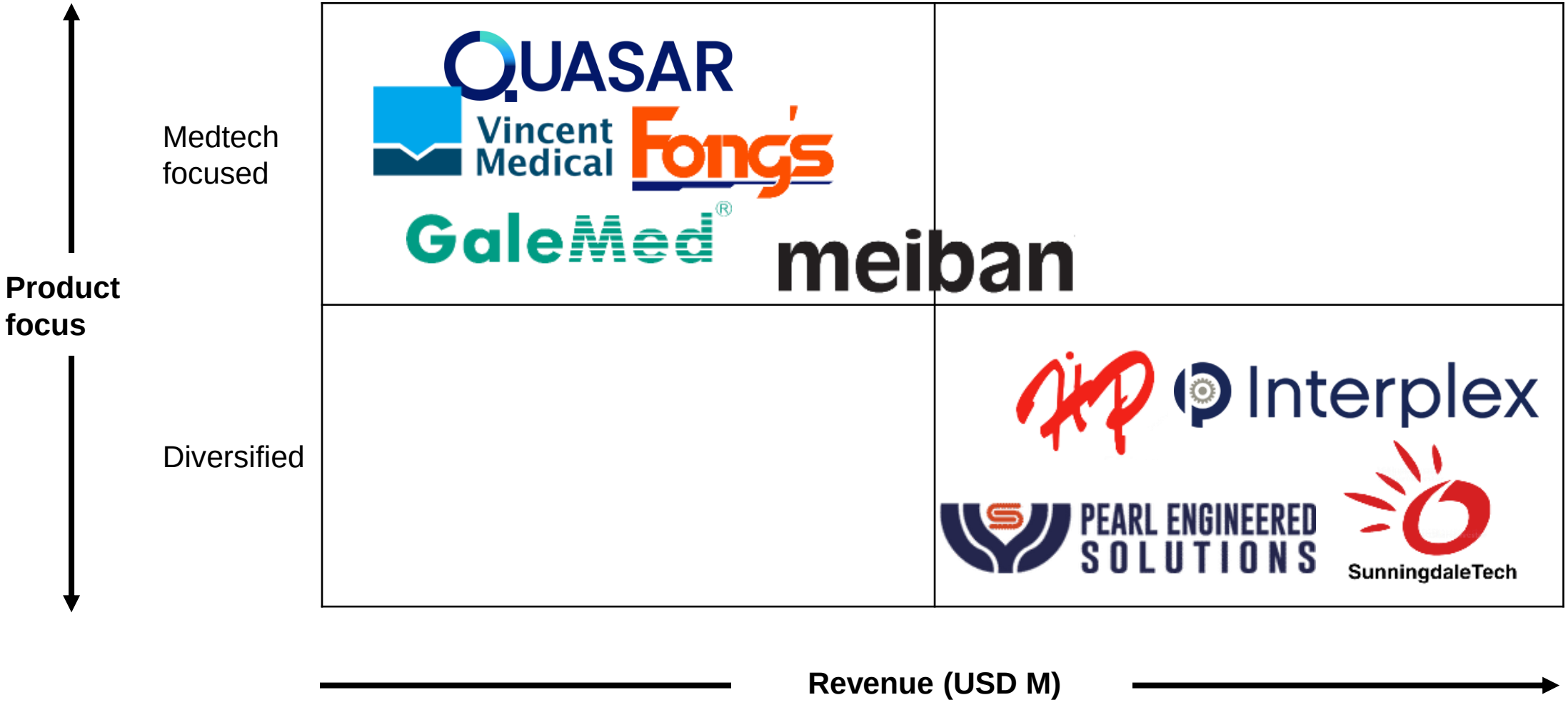
Drivers	Description	Product lifecycle phase: Pre-commercial (~5 years)	Introduction (1-2 years)	Growth (2-3 years)	Maturity	Commentary
Technical expertise	OEM **purchasing decisions generally made by end-market leaders** (e.g., Ortho group at Medtronic), making specific technical **expertise critical to expanding share-of-wallet**	●	●	◔	◔	*"**Without the right end-market expertise, its virtually impossible** to become the primary CMO for a large OEM…many CMOs are focusing on the high-growth end-markets (e.g., surgical robotics). This makes it critical to hire the right people. **If you lack that expertise there's no real way to get traction.**"*
Customer advocacy	Strong **positioning with existing customers is a pre-requisite to deeper partnerships**	◔	◔	◑	◔	*"**Trust is built from real-world experience** with the CMO. Over time, the OEM will come to us and ask us to increase our value-add on a specific device (e.g,. drill holes in catheter)…**without that trust we wouldn't get additional opportunities**"*
Account management	As share-of-wallet grows with top customers, the **expectation for best-in-class service and relationships management growth**	◔	◔	◕	◕	*"We are hiring specialized salespeople as global account managers to own 1 – 2 large customer relationships… **handling one customer is a huge responsibility**. Our **account managers are often former employees at the OEMs** because its very important to know the culture."*
Price	The ability to produce at **low cost** is a key consideration, especially for **productions at scale at the latter stages of the product lifecycle**	◔	◔	◕	●	*"OEMs will look for CMOs that can deliver **high quantities at low cost** when ramping up sales. Low-cost structure is especially key during the maturity phase, when sales are ramping down and OEMs are trying to squeeze the last bit of profitability from the product"*
Service range	Playing a strategic partner role requires CMOs to build a **broad set of capabilities across the value chain**	◔	◑	●	●	*"If you want the be the primary CMO for one of the large OEMs, **you really need to be able to provide all the services OEMs looking for. That's really a steep task and not many are able to do it."***

Legend: Low ◔ High ●

Technical expertise and customer advocacy are most relevant in the early stages of the product lifecycle, whereas account management and service range become most relevant in the later stages

Source: Market participant interviews, Bain POV

Top-tier players have successfully diversified into higher margin high-precision and/or value-added services



Source: Bain experience

Benchmarking | Meiban Vs. Mid-sized medical specialists (1/2)

BENCHMARKING | MID-SIZE MED SPECIALISTS | NON-EXHAUSTIVE

	meiban	Fong's	QUASAR	GaleMed	Vincent Medical
Headquarters					
Founded	1987	1982	1988	1986	1997
Business description	EMS provider offering design, development, contract manufacturing, and full product assembly to medical, energy, and consumer product industries	Precision engineering company engaged in the design, manufacture and repair of products for the medical industry	Offers turnkey manufacturing solutions for the medical device industry; specializing in end-to-end production of minimally invasive medical devices	Specializes in R&D, production, component supply, and marketing of respiratory therapy products in emergency and respiratory therapy	Medical devices manufacturer specializing in respiratory therapy, imaging disposable products, and orthopedic and rehabilitation products
Ownership	**Private -** Owned by Zhong Yong Holdings; PE owner: Dymon Asia Capital	**Private -** Owned by FSP Holdings	**Private -** Owned by Boyu Capital	**Private -** Owned by Nexus Point Capital	**Public -** 58.5% owned by Vincent Raya International
# of employees	3,600+	Limited info	3,600+	650+	1200+
M&A Activity (Since 2021)	Limited info	Limited info	Acquired Creganna operation in SG from TE in 2021 and balloon catheter segment from Ridgeback in 2024	Limited info	Limited info
Industries served	Consumer Products, Medical, Clean Tech, Automotive, Energy Services,	Medical/surgical equipment, critical care, orthopaedics, precision machining	Medical devices	Medical devices	Medical devices
MedTech focus					
Precision engineering capability *(estimated)*					
Medical products	Devices for Heart Valve Therapy, Sleep Disorder, Laboratory Instruments, Syringe Systems, Blood Collection	Endoscopy couplers, disposable pressure transducers, robotic surgery systems	Medical balloons and catheters, micro-sensors for minimally invasive medical devices	Breathing trainers, laryngoscopes, resuscitation devices, spacers, anesthesia & NIV masks	High-flow oxygen therapy devices, respiratory humidification systems, rehabilitation devices
Capacity	16 production sites across SG, MY, CH; 104k sq. m. across 4 key sites	Limited info	10 global facilities; Production space - 700k sq. ft.	Limited info	2 production facilities; 764K+ sq.ft manufacturing site
ISO certification	ISO 13485:2016*, ISO 27001:2022, ISO 9001:2015, ISO 14001:2015, ISO 22301:2019	ISO 13485:2016*, ISO 14001, ISO 9002	ISO 13485:2016*	ISO 13485: 2016*, ISO 14001:2015, ISO 9001: 2015	ISO 13485:2016*, ISO 9001

Source: Lit. search; Company and competitor websites

Benchmarking | Meiban Vs. Large Asian Manufacturing Groups (2/2)

BENCHMARKING | LARGE MFG. GROUPS | NON-EXHAUSTIVE

	meiban	Hi-P	Interplex	SunningdaleTech	PEARL ENGINEERED SOLUTIONS
Headquarters					
Founded	1987	1980	1958	1995	2017
Business description	EMS provider offering design, development, contract manufacturing, and full product assembly to medical, energy, and consumer product industries	Integrated contract manufacturer specializing in precision tooling, plastic molding, metal stamping, and full product assembly for mobile, lifestyle, computing, medical, and industrial devices	Designs and manufactures high-precision interconnect and mechanical products for markets such as Medical, Mobility, and Information & Communications Technology	Manufactures precision plastic components and offers product and mold design, fabrication, injection molding, precision assembly of complete products in automotive, consumer, IT, healthcare industries	Specializes in high-precision tools and injection-molded components for electronics, automotive, healthcare, and industrial markets; services include tooling, molding, metal stamping
Ownership	**Private -** Owned by Zhong Yong Holdings; PE owner: Dymon Asia Capital)	**Private -** 65 Equity Partners invested $74.15M in Hi-P International in 2024	**Private -** Owned by Blackstone	**Private -** Backed by Novo Tellus Capital Partners	**Private -** Ying Shing and Fischer Tech entered a strategic merger (2017); Backed by Platinum Equity
# of employees	3,600+	15000+	11,000+	9000+	5,000+
M&A Activity (Since 2021)	Limited info	Limited info	Acquired US-based OCP Group (2021)	Acquired Proactive Plastics in 2024	Limited info
Industries served	Consumer Products, Medical, Clean Tech, Automotive, Energy Services,	Mobile Device, Lifestyle, Computing & Peripherals, Medical, Industrial	Medical, mobility, information and communications	Automotive, Aerospace, Consumer, IT, Healthcare, Personal Protective	Electronics, automotive, medical, and industrial markets
MedTech focus					
Precision engineering capability *(estimated)*					
Medical products	Devices for Heart Valve Therapy, Sleep Disorder, Laboratory Instruments, Syringe Systems, Blood Collection	Medical diagnostic products	Medical interconnects, injection molded components, cable assemblies, harnesses and finished devices	Medical disposables, heard aids, airway management, orthopedic, optometric devices and components	Diagnostic & patient monitoring devices, drug dispensing & delivery systems, imaging equipment
Capacity	16 production sites across SG, MY, CH; 104k sq. m. across 4 key sites	9 manufacturing sites across China and Thailand	33 manufacturing sites, 6 design centers, 9 R&D sites	18 manufacturing facilities across 9 countries; factory space 4 million sq. ft.	3 facilities; Manufacturing space – 1.2 million sq. ft.
ISO certification	ISO 13485:2016*, ISO 27001:2022, ISO 9001:2015, ISO 14001:2015, ISO 22301:2019	ISO 9001, ISO 14001, ISO 13485*	ISO 9001:2015, ISO 13485:2016*, ISO 14001:2015, ISO 45001:2018, ISO/IEC 17025:2017 , AS 9100:2016 IATF 16949:2016 , ISO 14554-1:2013 , ISO 3834-2:2005, ISO 27000:2013	ISO 9001, ISO 13485*, ISO 14001, ISO 45001	ISO 13485*,ISO 14001, ISO 9001:2000, ISO 22301, ISO TS 16949

Source: Lit. search; Company and competitor websites

Potential roll-up play: Sample asset list for SEA Medtech/CMO players (1/2)

	Overview				*Industry focus*		*Medtech contract manufacturing focus*			*Others*
	Company Name	**Head-quarters**	**Revenue (US$M, Year)**	**EBITDA (US$M, Year)**	**Only medtech contract mfg (Y/N)**	**Other industries**	**Medtech sub-segments**	**Product examples**	**Location of contract mfg sites**	**Other remarks** *(e.g., M&A, carveout)*
1	Meiban Corporation	Singapore	n/a	n/a	No	**Services:** Design & Engineering, Software **Mfg industries:** CP, Automotive	Heart valve therapy, sleep apnea, hospital supplies	Heart valve therapy devices, sleep disorder devices, syringes	Singapore, China, Malaysia	
2	Forefront Medical Investment	Singapore	$49M (2021)	N/A	No	**Services:** Product applications and development	Diagnostic imaging, drug delivery, hospital supplies, respiratory devices	Diagnostic devices, respiratory airways, drug delivery systems, feeding catheters	Singapore, China	Independent subsidiary of VicPlas International
3	OSA Technology	Malaysia	$41M* (Year N/A)	N/A	Yes	N/A	Hip and knee reconstruction	Fragment plates and screws, wires, external fixators	Malaysia	
4	Straits Orthopaedics	Malaysia	$32M (2020)	4M (2020)	Yes	N/A	Hip and knee reconstruction; spinal surgery	Bone screws, nails, knee components for implants, sutures	3 sites in Penang, Malaysia	
5	OLIC	Thailand	$31M (2020)	$8M (2020)	No	**Services:** Product development, logistics **Mfg industries:** Pharma	Hospital supplies	Sterile liquids, aerosol sprays, emulsions	Thailand	
6	Steripack Asia	Ireland	$10M (2021)	$0.7M (2021)	No	**Mfg industries:** Pharma manufacturing	Orthopaedic implants, dental implants, vascular medical devices, laproscopy, wound care	Bone implants, injection molding, gluing connectors	Malaysia, USA (3), Poland	
7	LHI Technology (S) Pte Ltd.	Singapore	N/A	$15K (2012)	Yes	N/A	Medical cables	Medical cables	Singapore, China, Germany, US	Acquired by Carlisle Interconnect Tech

Revenue only for Malaysian subsidiary of Steripack

Note: * From ZoomInfo
Source: EMIS; Literature Search

Potential roll-up play: Sample asset list for SEA Medtech/CMO players (2/2)

	Overview				*Industry focus*		*Medtech contract manufacturing focus*			*Others*
	Company Name	**Head-quarters (Offices)**	**Revenue (US$M, Year)**	**EBITDA (US$M, Year)**	**Only medtech contract mfg (Y/N)**	**Other industries**	**Medtech sub-segments**	**Product examples**	**Location of contract mfg sites**	**Other remarks** *(e.g., M&A, carveout)*
8	Intech	USA	N/A	N/A	Yes	N/A	Hip, knee, spine surgeries, trauma fixation	Joint implants, modular racks, femoral broach holders, plate benders, disc prep elevators	Malaysia, USA, France	Part of co. acquired by Montagu PE firm in 2021
9	GPC Medical	Malaysia	N/A	N/A	Yes	N/A	Orthopedic instruments and implants (MY)	Spinal implants, interlocking nails, external fixators	Malaysia, India	
10	Orthomedic Innovations	Malaysia	N/A	N/A	No	**Services:** Product Design & Development	Orthopedic instruments and implants (MY)	Trauma implants, spinal surgical instruments	Malaysia	
11	Esco Life Sciences	Singapore	N/A	N/A	No	**Services:** Product Design & Development **Mfg industries:** Life Sciences, Bioprocessing Tools	IVF equipment	Multiroom incubator, timelapse incubator	US, UK, Indonesia, Singapore	
12	Esco Aster	Singapore	N/A	N/A	No	**Mfg industries:** Cell line creation, clinical trial materials	IVD, hospital supplies	Covid-19 isolation booths, immunoassay reagents, PCR enzymes	Singapore, USA	Subsidiary of Esco Lifesciences Group
13	AMT	Singapore	N/A	N/A	No	**Mfg industries:** Automotive, industrial, electronics	IVD, hospital supplies, ENT, general surgery	IVD solutions, hearing aids, robotic surgical systems	Singapore, China	
14	AP Technologies	Singapore	N/A	N/A	Yes	N/A	General surgery, drug delivery	Balloon tubing, IV catheter tubing, guide catheter	China	

Source: EMIS; Literature Search

Key risks and their potential impact on MedTech CDMOs

CDMO RISKS

Key risks	Description	CDMO implication	Reference points
Regulatory & compliance Changes 	Stricter FDA and EU MDR rules increase the complexity of medical device approvals	• Need for ongoing investment in compliance systems and risk of delays in certification • Increased operational costs for regulatory updates	The **EU MDR** (effective 2021) introduced **tougher certification requirements**; as of mid-2022, **>85% of devices had not yet been certified** under the new rules, creating a backlog
Supply chain disruptions 	Global supply chain shifts lead to shortages of materials and logistics delays	• Production delays due to material shortages • Increased logistics, sourcing costs and supply chain flexibility	"*Commercial slowdown in China, a key player in the production of plastics, electronic components, etc. has exposed medical device manufacturers to **surges in material and transportation costs**, as well as unpredictable **procurement delays**"* – *Market expert*
Geopolitical & market access barriers 	Trade wars, tariffs, and export controls disrupt global supply chains and access to markets	• Need to adjust manufacturing strategies for tariffs and increased risk of market access • Diversified operations become key for resilience	New wave of **import tariffs** introduced by U.S in 2025 on medical device components, semiconductors, and precision manufacturing equipment coming from China, Mexico and Canada will lead to i**ncreased production costs** for U.S based manufacturers relying on imported parts
Margin pressures 	Rising margin pressures doubled with challenges to pass through cost inflation to powerful customers	• Stronger focus on operational efficiencies, cost-cutting measures, and lean manufacturing practices • Strategic investments in automation and process optimization	Contract manufacturing is competitive (global EMS margins ~5–8%), and companies must continuously manage costs (labor, resin) and pricing

Source: Lit. search, Bain experience

AGENDA

Initial perspectives and thesis

Asset overview

Market and competitive positioning

Potential scope and approach

Scope questions for discussion – Commercial (1/4)

FOR DISCUSSION

		Key topics / questions	Proposed approach / sources
A Market	**MedTech industry market size, trends and growth**	• What is the market size of the industry globally (2021A, 2024A, 2030F)? By region? By therapeutic area? • What is the growth drivers of the industry? Current industry trends? • Who are the key players? By region? By therapeutic area? [proposed to focus on key region and key therapeutic areas] • Trend of in-housing vs. outsource? % outsource overtime? Why? • Margin trend?	*Secondary reports, industry participants interviews, TAM modelling*
	MedTech CDMO industry market size, trends and growth	• What is the market size of the industry globally (2021A, 2024A, 2030F)? By region? By therapeutic area? • What is the growth drivers of the industry? Current industry trends? E.g. Cost pressures • Who are the key players? By region? By therapeutic area? Meiban's market share? • Margin trend?	*Secondary reports, industry participants interviews, TAM modelling*
	Consumer electronics industry market size, trends and growth	• What is the market size of the industry globally (2021A, 2024A, 2030F)? By region? By type of product? What are the sub-segments under consumer electronics that are most attractive going forward? • What is the growth drivers of the industry? Any trend? • Who are the key players? By region? By type of product? [proposed to focus on key region and key sub-segments] • Trend of in-housing vs. outsource? % outsource overtime? Why? • Margin trend?	*Secondary reports, industry participants interviews, TAM modelling*
	Consumer electronics CDMO industry market size, trends and growth	• What is the market size of the industry globally (2021A, 2024A, 2030F)? By region? By type of product? • What is the growth drivers of the industry? Any trend? E.g. global supply chain shifts • Who are the key players? By region? By type of product? Meiban's market share? • Margin trend?	*Secondary reports, industry participants interviews, TAM modelling*

Scope questions for discussion – Commercial (2/4)

FOR DISCUSSION

B

		Key topics / questions	Proposed approach / sources
Customers	**Stickiness of MedTech CDMO**	• Barriers for OEM to switch CDMO supplier • FDA approval (or other regulatory requirements) process and timeline for new CDMO supplier • How many CDMO suppliers does an OEM usually work with? On the other hand, is a concentrated customer base normal for a CDMO? • How difficult to win new customers? What is the process and timeline like? • Difficulty or timeline required to bring in-house? Which therapeutic areas / medical devices are more difficult to produce in-house? • Any geographical production interest? How competitive are Singapore and Malaysia?	*Secondary reports (regulations), industry participants interviews – customer calls, Mgmt. Q&A, internal data*
	Stickiness of consumer electronics CDMO	• Barriers for OEM to switch CDMO supplier • Approval (or regulatory requirements) process and timeline for new CDMO supplier • How many CDMO suppliers does an OEM usually work with? On the other hand, is a concentrated customer base normal for a CDMO? • How difficult to win new customers? What is the process and timeline like? • Difficulty or timeline required to bring in-house? Which electronics components / area are more difficult to produce in-house? • Any geographical production interest? How competitive are Singapore and Malaysia?	*Secondary reports (regulations), industry participants interviews – customer calls, Mgmt. Q&A, internal data*
	ResMed – growth, stickiness, position vs. peers	• What component does Meiban manufacture for ResMed? Could we confirm if there is any sole-supplier arrangement between Meiban and ResMed (product wallet share structure – e.g. # of parts per supplier etc.)? Who are the key competitors for ResMed for their current products? • Analysis of past and pipeline programs with ResMed. Why Meiban won those contracts? What kind of revenue growth Meiban could achieve from ResMed (2025F-2030F)? • How sticky is ResMed relationship? Would ResMed in-house / switch CDMO some of the current programs with Meiban? • Reimbursement risk – how would changes around the affordable care act (“ACA”) impact ResMed and its suppliers? • Sleep Apnea innovation – are there any superior alternatives on the horizon to CPAP treatment for OSA, surgical intervention, nerve stimulation devices or dental appliances that can treat OSA (that could render CPAP obsolete)? • Physician advocacy for ResMed vs Philips - which one is more favored? [light touch / high level feedback on physician advocacy – no survey] • Sleep Apnea device (i.e. CPAP machine) competitive landscape • Does ResMed use any ester-based polyurethane substance (said to be carcinogenic) in the manufacturing of its CPAP machines? Any risk that ResMed machine may suffer a recall like in Philips' CPAP machines?	Industry participants interviews – customer calls, warm leads, Industry participants interviews – physician calls, Mgmt. Q&A, secondary reports, internal data

Scope questions for discussion – Commercial (3/4)

FOR DISCUSSION

		Key topics / questions	Proposed approach / sources
B **Customer**	**Dyson – growth, stickiness**	• Could we confirm if there is any sole-supplier arrangement between Meiban and Dyson? • Analysis of past and pipeline programs with Dyson. Why Meiban won those contracts? • What kind of revenue growth Meiban could achieve from Dyson (2025F-2030F)? • How sticky is Dyson relationship? Would Dyson in-house / switch CDMO for some of the current programs with Meiban?	*Industry participants interviews – customer calls, warm leads, Mgmt. Q&A, secondary reports, internal data*
	Others (excluding MedRes and Dyson)– growth, stickiness **Suggest light touch on this topic given less revenue and economics contribution**	• Analysis of past and pipeline programs for other customers. Why Meiban won those contracts? • What kind of revenue growth Meiban could achieve from other customers (2025F-2030F)? • How sticky is the relationship with other customers? • Suggest to be done at aggregate level for the above	*Mgmt. Q&A, internal data*
	Meiban's Own Competitive advantage	• What is Meiban's competitive advantage compared to its competitors in Asia? Globally? [suggest to focus on 4-5 key competitors in focus geography i.e. Asia] • What is Meiban's competitive positioning in its key geographies? (e.g. customer advocacy of Meiban vs peers, Meiban's performance vs. peers on customers' KPC, other customer feedback) • What is Meiban's competitive disadvantage?	*Industry participants interviews – customer calls, Warm leads, Mgmt. Q&A*
	Capex	• Can Meiban's current capacity and capex plan support the projection presented in IM?	*Mgmt. Q&A, Mgmt. forecasts*

Scope questions for discussion – Operational & value planning (4/4)

FOR DISCUSSION

	Key topics / questions	Proposed approach / sources
C **Operational / Tech DD**	• What are the areas for improvement within Meiban? - COGS, SG&A, Operations, System, Manpower, etc. How does the plants / facilities perform on key metrics (CAPEX invested, max capacity, production reliability, other operating benchmarks etc.) • If we want to focus on MedTech, does Meiban need a Sales / Biz Development Director focusing on MedTech? • How do other best-in-class peers perform in their operations? What are the best-in-class benchmarks for COGS, SG&A, Opex etc.? How do Meiban compare vs. best-in-class peers?	*Industry participants interviews, benchmarking exercise, mgmt. Q&A, internal data*
D **Value creation plan**	• What is the right framework to think about prioritizing VCP levers, keeping couple of considerations such as Meiban's right to win, attractiveness / size of prize, feasibility, etc.? • New customers deep-dive: Which area of growth should Meiban pursue – which therapeutic area and/or consumer electronics should Meiban focus on? How can Meiban win new customers? • Geographical expansion deep-dive: Where do we need to grow given Meiban's footprint? Do we need to go to US / EU? • What is the right strategy to deliver on the above VCP levers? E.g. on geo expansion – do we need US / EU sales office to win businesses from US / EU OEMs? Alternatively, would a US/EU M&A (independent business or current in-house facility of an OEM) be a preferred way?	*Industry participants interviews, Mgmt. Q&A, secondary reports*
D **M&A / bolt-on acquisition**	• What kind of M&A would be synergistic to Meiban? • How easy / difficult is it to integrate competencies (e.g. plastic with metal machining)? • Areas to watch out for in terms of integrating CDMOs? • Which are the potential available targets?	*Industry participants interviews, Mgmt. Q&A, secondary reports*
D **Consumer electronics carve-out**	• What is the synergy between Meiban's MedTech and Consumer electronic segment? • Can each of the segment operate standalone? If not, where are the overlapping areas? • If Meiban were to spin-off its Consumer electronic segment, who are the potential buyers?	*Mgmt. Q&A, industry participants interviews*

Primary research: Suggested topics for customer and competitor interviews

/ NON-EXHAUSTIVE / PRELIMINARY

Customer interviews *(sourced from expert networks and warm leads)*

- Sample target customer profiles: current and former senior executives / mgmt., personnel who are in charge of procuring MedTech / Consumer Electronic components, product R&D team, etc.
- Target N: 10-20
- Sample interview topics:
  - What is the typical process in **choosing and onboarding** CDMO supplier? Who is the **key decision maker** in selecting a CDMO supplier?
  - What does a typical **contract** look like (esp. **number of years, exclusivity**)?
  - What is the typical **level of stickiness** with a CDMO supplier? How easy it is to **switch** and under what scenarios will switching be considered?
  - **Advocacy** for current CDMO supplier, **feedback** on strengths and weaknesses
  - **KPC for choosing CDMO supplier** and **relative performance** of CDMO supplier(s)
  - Potential / **likelihood of in-housing**, and if so, what **sub-sectors / areas are more likely to be in-house and why**?

Competitor interviews *(sourced from expert networks)*

- Sample target customer profiles: current and former senior executives / mgmt. of MedTech and/or Consumer Electronics contract manufacturers
- Target N: 5-10
- Sample interview topics:
  - What is the market size, trends, growths and growth drivers for MedTech and/or Consumer Electronics? Which sub-segments are most attractive going forward and why?
  - What are the current industry trends in MedTech and/or Consumer Electronics?
  - What are the trends with regards to in-housing vs outsourcing?
  - How do margin trends look like going into the future?
  - Customer concentration: Who are the MedTech and/or Consumer Electronics customers that you are currently working with and what is the estimated SoW for each customer?

Operational deep dive: We will prioritize a set of critical questions with Meiban's current operation

FOR DISCUSSION

	1 Manufacturing & COGS	2 Supply Chain performance	3 SG&A benchmark	4 Capex planning
Key questions to be assessed	• What is the amount of headroom available to grow current (or future growth) portfolio? • Will the growth continue to come at current mfg cost structure or increased cost? • How does Meiban perform in terms of labor utilization, efficiency, quality and yield? are there rooms to further optimize and automate? • Is capacity sufficient to support growth?	• How does Meiban perform across its critical SLAs (lead-time, OTIF, etc)? • How does effective is the supply and demand planning, what is the plan and schedule adherence? • What is the average batch size and campaign run? How much capacity is lost to changeover? • Any bottlenecks in the planning process, inventory build up, W/H space availability etc.	• How do peers perform in their operations? What are the best-in-class benchmarks for SG&A? • How do Meiban compare vs. best-in-class peers? • Will current SG&A enable Meiban to grow or will that increase? • If we want to focus on MedTech, does Meiban need a Sales / Biz Development Director focusing on MedTech?	• What is requirement of new Capex to support growth? • Any urgent capex requirement since given growth targets? • Any risk of missing order delivery or delay of new machine startup? • Can Meiban's current capacity and capex plan support the growth projected?
Approach and data access	✓ Site visits ✓ Management interviews ✓ Internal data ✓ Functional expert views ✓ Industry benchmark			

Team: Leadership team will comprise of individuals who have extensive healthcare and MedTech experience

/ EXACT TEAM MEMBERS TBA AT CDD CONFIRMATION

Fabio La Mola
SEA Life Sciences Lead

- Led multiple commercial due diligence in CDMO sector

Usman Akhtar
SEA PE Lead

- Led multiple commercial due diligence in precision engineering in SEA

Tom Kidd
Leader in Healthcare PE capability

- Extensive experience in HCPE and Advanced Manufacturing in SEA and North America

Alex Boulton
APAC Healthcare PE Lead

- Led multiple commercial due diligence engagements in precision engineering and MedTech CDMO in SEA

Chris Liu
APAC Expert in Performance Improvement

- Deep expertise in operations in advanced manufacturing businesses
- Worked as Chief Transformation Officer in Tooling & Injection company

Team: We have access to a deep bench of global MedTech experts

Mayuri Shah
Partner, New York

14 years at Bain, focus on MedTech, including growth strategy, performance improvement, and due diligence analysis

Dieter Meyer
Partner, Zurich

13 years at Bain, with deep MedTech experience and expertise in strategy development and implementation, and M&A and post-merger integration

Tim van Biesen, Ph.D.
Partner, New York

Healthcare Practice Global Leader, 18+ years at Bain, extensive experience in strategy, performance improvement, commercial excellence and M&A for multi-national MedTech companies

Kevin Chang
Partner, Hong Kong

14 years at Bain, member of Bain's Healthcare Practice, deep expertise in MedTech

Mattias Karlsson
Partner, Stockholm

13+ years of consulting experience, 5 years at Bain, member of Bain's Healthcare Practice, deep expertise in MedTech

Credentials: Bain brings extensive CDD experience in precision engineering and global MedTech experience

/ NOT EXHAUSTIVE

Regional SEA precision engineering

>10 precision engineering CDDs in SEA alone

Companies analyzed (targets + competitors):

ARMSTRONG

UNISTEEL®
The precision component specialist

SunningdaleTech

AMTEK
DRIVEN BY EXCELLENCE

INNO Values
Precision Parts, Precision Partnerships.

Interplex

MI Holdings Group

Beyonics

Global MedTech experience: Complete over 220 diligences within MedTech in recent years

- Medical device manufacturer focusing on **ultrasound, X-ray, IVD** and **dialysis machines**
- Manufacturer of **in-vitro diagnostics equipment and assays**
- Medical device manufacturer, specializing in **arthroscopy, electro surgery, and powered surgical tools**
- Company involved in production, distribution, and sale of **vascular stents** and **minimally invasive radiofrequency ablation technology** products
- Manufacturer of **dental implants, medical devices** in the fields of urology and surgery
- Company providing ophthalmic surgeons with **instruments & equipment** for **anterior & posterior ophthalmic surgery**
- Manufacturer & supplier of **wound care products, surgical gloves, surgical drapes**
- Company manufacturing health related products such as **blood glucose monitoring system, electronic medical record system for clinics, ultra low temperate freezer, general refrigerator, CO_2 incubator**

Credentials: This team has recent experience across the full deal cycle with a leading PE-owned, SG-headquartered precision engineering company

Precision Engg. co

- $1B diversified precision engineering group, headquartered in Singapore and with a broad offering of interconnectors & high precision components and mechanical services
- Serves a range of sectors including Auto, Mass Storage, Medical etc.
- Manufacturing footprint across NA/Eur/APAC

CDD (2016)

- Supported CDD for ultimate buyer, as part of a competitive deal process / secondary transaction

Portfolio support (2016-17)

- Designed full potential plan in partnership with the management team
- Delivered a focused salesforce excellence initiative engagement to support institutional-ization of the capabilities

Exit/CDD (2021)

- Supported CDD for ultimate buyer, as part of a competitive deal process / secondary transaction

"Home-run" investment for PE fund

BAIN & COMPANY