

# Singapore Precision Industry Presentation



# The Precision Engineering Sector

- Singapore's precision engineering sector has seen tremendous development over 30 years of industrialization, first serving the needs of multinational corporations operating in the country and now, a customer base that spans the globe, including some of the world's largest corporations.
- The sector encompasses companies engaged in the manufacturing of moulds & dies, jigs & fixtures, metal stamping, metal castings, plastic and rubber moldings, precision machining, photonic and semi-conductor equipment, aerospace and automotive parts.
- The sector is represented by SPETA( Singapore Precision Engineering & Tooling Association).
- Singapore's electronics and precision engineering companies offer world-class manufacturing capabilities in manufacturing, engineering, technology and total supply chain solutions; as well as in product design and R&D.
- Singapore-based suppliers have built up good connections with customers all over the world. These connections will prove useful to any company looking to access new markets in the region.

# Singapore – Business Environment and Capabilities

- Asia most stable country, welcome foreign investments and expertise, no-corruption, minimum red-tape, quick to adapt to changes, open-door policy
- Key regional trading centre, the world's busiest port, and a top location for investments in the Asia Pacific.
- Unique location, international trade connections, financial expertise, worldwide sea and air links, modern port and airport facilities, sophisticated telecommunications network, and comprehensive land transport system.
- On going dialogue and consultation between Government and private sector on major policies affecting the business community.
- Free trade policy with minimal restrictions on the import and export of goods which allow commodities, and consumer and industrial items enter and leave the country free from duty charges.
- The size of Singapore external trade is about three times that of her domestic GDP.
- Strategic investments, tax incentives, and research and development grants have combined to attract some 7,000 multinational companies to use Singapore as a base for their global operations.

# Singapore Precision Industry Snapshot

Size of output	Establishment	Employment	Total Output	Value Added	Value Added/ Worker
< \$ 1m	1,280 (48%)	6,300 (7%)	\$500 m (2%)	\$200 m (3%)	\$29,200 (36%)
\$ 1m to < \$ 5m	790 (30%)	16,100 (17%)	\$1,900 m (9%)	\$700 m (11%)	\$46,110 (56%)
\$ 5m to < \$ 10m	220 (8%)	9,700 (10%)	\$1,500 m (7%)	\$500 m (8%)	\$56,300 (67%)
\$ 10m to < \$ 25m	190 (7%)	18,000 (19%)	\$3,000 m (14%)	\$1,000m (16%)	\$56,300 (67%)
\$ 25m to < \$ 50m	90 (3%)	11,800 (13%)	\$3,000 m (14%)	\$900 m (15%)	\$74,000 (90%)
=> \$50m	90 (3%)	31,100 (33%)	\$10,900 m (53%)	\$2,900 m (47%)	\$93,100 (114%)
<b>Total</b>	<b>2,650</b>	<b>93,000</b>	<b>\$20,700 m</b>	<b>\$6,200 m</b>	<b>\$66,000 (avg)</b>

# Singapore Precision Industry Snapshot

Size of output	Establishment	Employment	Total Output	Value Added	Value Added/ Worker
< \$ 1m	1,280 (48%)	6,300 (7%)	\$500 m (2%)	\$200 m (3%)	\$29,200 (36%)
\$ 1m to < \$ 5m	790 (30%)	16,100 (17%)	\$1,900 m (9%)	\$700 m (11%)	\$46,110 (56%)
\$ 5m to < \$ 10m	220 (8%)	9,700 (10%)	\$1,500 m (7%)	\$500 m (8%)	\$56,300 (67%)
\$ 10m to < \$ 25m	190 (7%)	18,000 (19%)	\$3,000 m (14%)	\$1,000m (16%)	\$56,300 (67%)
\$ 25m to < \$ 50m	90 (3%)	11,800 (13%)	\$3,000 m (14%)	\$900 m (15%)	\$74,000 (90%)
=> \$50m	90 (3%)	31,100 (33%)	\$10,900 m (53%)	\$2,900 m (47%)	\$93,100 (114%)
<b>Total</b>	<b>2,650</b>	<b>93,000</b>	<b>\$20,700 m</b>	<b>\$6,200 m</b>	<b>\$66,000 (avg)</b>

# The Precision Engineering Sector

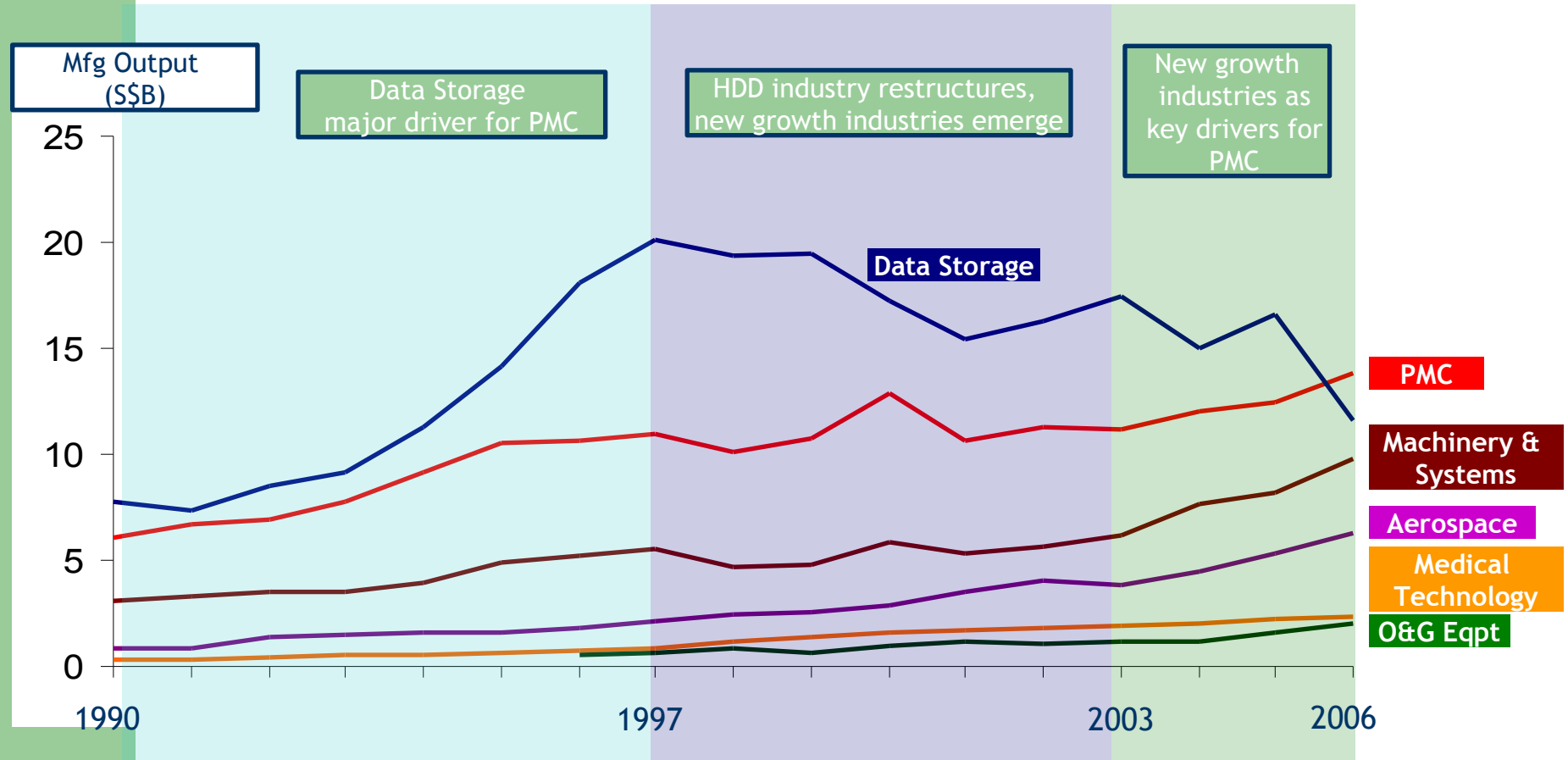
The industry (PE) is recognized as crucial for the continuous development of Singapore manufacturing output being the backbone of the following industries:

- Electronics
- Medical Technology
- Aerospace and Automotive
- Oil and Gas equipment

The Key objectives for the Singapore Precision Engineering sector are:

- Build and strengthen key capabilities
- Diversify into new growth industry and markets
- Forge strategic collaboration to gain access to new markets and technologies

# The Precision Engineering Sector – Industry Trends



Source: EDB, 2008

Accelerate growth of PMC suppliers through diversification into new growth industries

# Potential Growth Sectors



## Consolidation of worldwide supplier base for Semiconductor industry

- Up-tiering of local SMEs to become Tier 1 suppliers
- Partnering local SMEs to Tier 1 suppliers



## Outsourcing of complete systems integration by Mid-size MEDTECH companies in USA



## Health and Wellness Industry

Opportunities in health and wellness products requiring precision components and modules.



## Alternative energy equipment manufacturing Opportunities for specialized equipment and System Integration





# STRENGTH AND EXPERIENCE WORKING WITH INTERNATIONAL MNCs IN MEDICAL DEVICES



- S\$190 mil, 800 emp
- Centre of Competence for Needles & Syringes
- Critical Care Systems



- Proj emp 140 by 2008
- Mfg of Microarray gene chips



- Proj emp 50 by 2010
- Cell analysis systems and mass spectrometers



- S\$2.4 mil, 180 emp
- Interventional Cardiology & Critical Care products



- S\$70 mil, 400 emp
- Surgical stands and surgical operating microscopes



- S\$140 mil, 250 emp
- Contact Lenses & Global Distribution Centre



- S\$47 mil, 500 emp
- Blood Bag & Catheters



- S\$12 mil, 130 emp
- Thermal Cyclers & Sequence Detection System



- > S\$300 mil, >1800 emp
- Largest IV Sets, CAPD Solutions, Infusion Pumps



- >S\$50 mil, 520 emp
- Hearing Aids



- S\$50 mil, 400 emp
- Atomic absorption system, Auto liquid dispensing system, Bioassay reader



- S\$4 mil, 90 emp
- Electrochemistry meters & Thermometry Products

## STRENGTH AND EXPERIENCE WORKING WITH INTERNATIONAL MNCs IN MEDICAL DEVICES



- Mfg of Research Diagnostic kits.
- E.g. Rapid Test kits, ELISA, Western Blot R&D



- Manufacturing of high performance liquid chromatography systems



- Ultra-Sensitive Label Free DNA Detection



- Manufacturing and R&D of microfluidic chips



Edwards Lifesciences

- Projected: S\$34 mil, 400 emp by 2010
- Tissue heart valves



- Hematology Reagent Manufacturing



- R&D molecular diagnostic kits
- Real time, high throughput reaction array biochip

# STRENGTH AND EXPERIENCE WORKING WITH INTERNATIONAL MNCs IN MEDICAL DEVICES



## KLA-Tencor



- Asia Factory to manufacture a wide range of KT's equipment and subsystems.
- Global Installation & Application Team.



## ASM International

- 300-man mfg facility.
- Mfg vertical furnace, in addition to wire bonders and automold.



ASYST

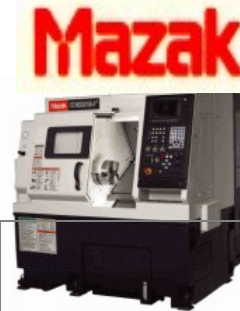
## Asyst

- Manufactures automated wafer handling systems.



## Makino

- Manufactures vertical milling machines and Electrical Discharge machines.



## Yamazaki Mazak

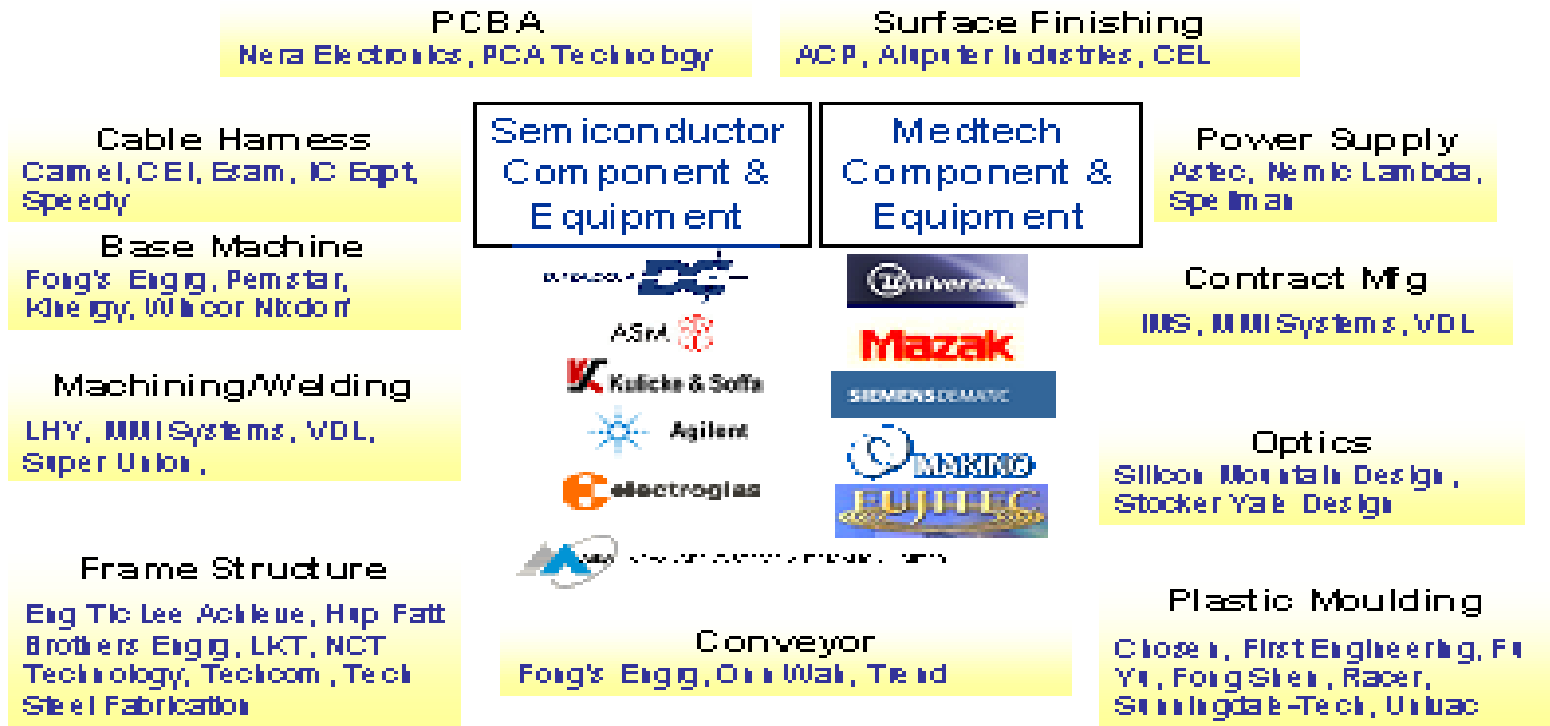
- Manufacture of machine parts and final assembly of machine centres.
- In 2002, invested S\$15 million to expand & convert the Factory in to a CyberFactory.



## VDL EGT

- Contract Manufacturer to top semicon equipment players such as ASML, KLA-Tencor and Applied Materials.

# STRENGTH AND EXPERIENCE TO SUPPORT COMPONENTS AND EQUIPMENT MANUFACTURERS



# Enterprise and Industry Upgrading

DEVELOP  
Manpower

National Precision Engineering Scholarship / Specialist Program

BUILD  
CAPABILITY

PE - COI @ SIMTech

Singapore Institute of Manufacturing Technology

LEAD - SPETA

SPETA SINGAPORE PRECISION ENGINEERING & TOOLING ASSOCIATION

MEDTECH CDP, SEMCON CDP

ACCESS  
OVERSEAS  
MARKET

AL-ADDRESS

One2Wash

PLC

PE Business Trip mission to Germany

Siemens Aerospace

SIEMENS

FIBrainLAS

FORGE  
Collaborations

SPRING Singapore

Building Enterprise

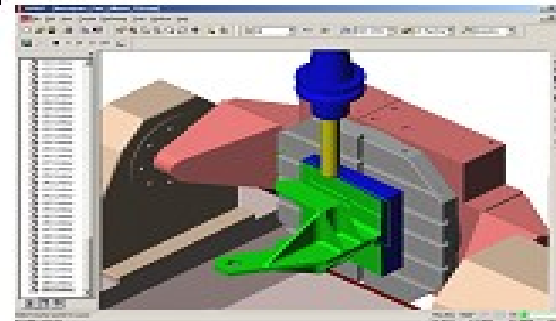
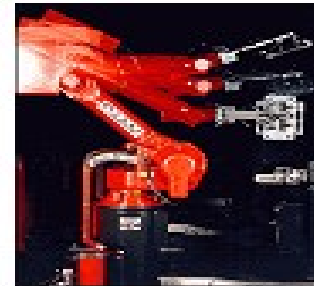
One2Wash + Cineset + SIMC

PLC + CIBA Vision

## Growing the Precision Industry sector.

### **EDB/SPRING's efforts to grow PE**

- Setting up of US\$10m PE Centre of Innovation at Simtech to support product & process development
- Award 1000 PE scholarships and apprenticeships to attract talents into the industry
- Enhance capabilities of PE SMEs through Medtech CDP and Semicon CDP



# Cooperation with Italian Companies in Precision Industry

- Cooperate with Italian companies in Asia, in Europe and in any other country or situation where a mutual advantage can be created (cost, market, service, logistic, etc).
- Singapore electronics and precision engineering companies can offer an extensive global presence to meet the varying needs of Original Equipment Manufacturers (OEMs) across many sectors, with more than 300 points of presence in Southeast Asia and China, and a further 100 each in the Americas, Europe, North Asia and Pacific.
- Cooperate with Italian companies in developing new technologies, tests, procedures, software or application.
- Create a continuous dialogue with Italian companies and representative of the PE on possible opportunities
- Positioned as a base for technology and high value-added manufacturing, Singapore is the ideal partner for Italian companies for assembly operations in the region.