



2013

# BATAM STATE POLYTECHNIC

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# OUTLINE

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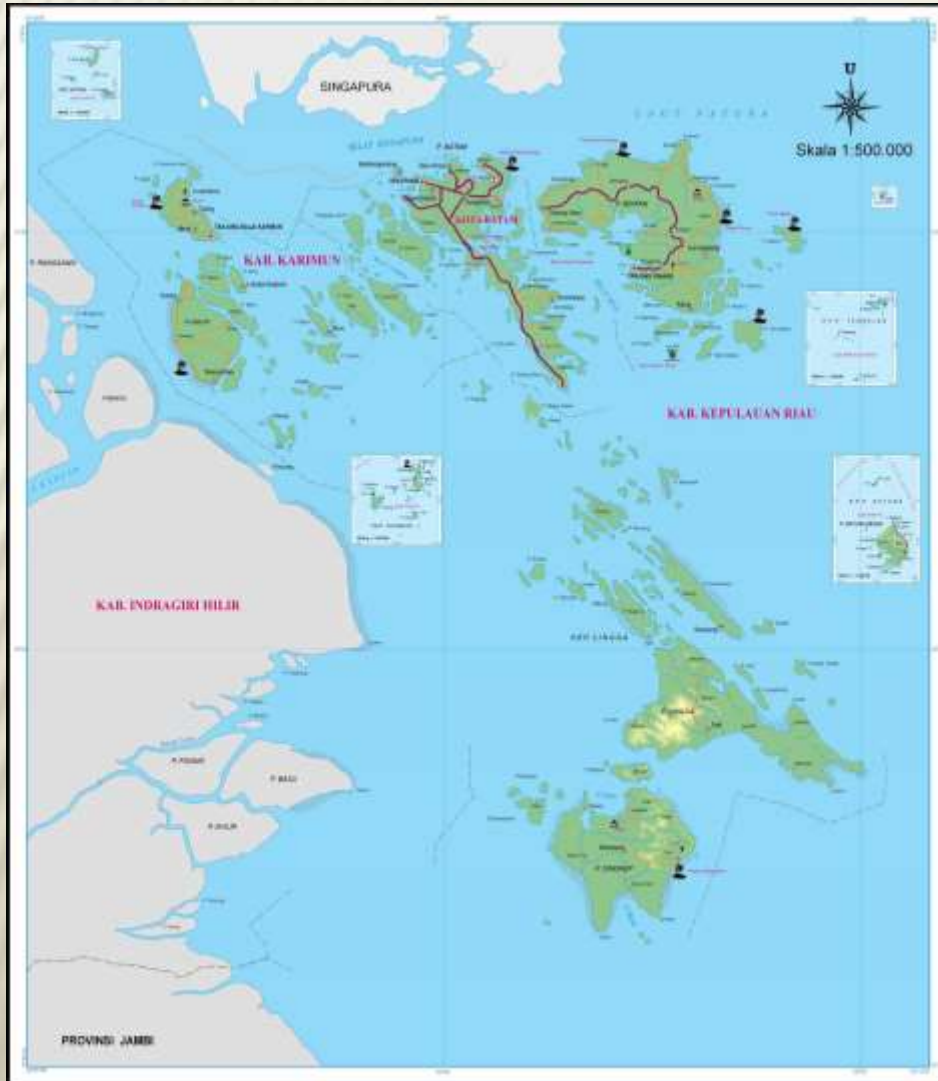
- × Background
- × Investment Area
- × Batam State Polytechnic
- × Batam Strategic Development
- × Teaching Factory

# BACKGROUND - INDONESIA





# BACKGROUND - RIAU ISLANDS PROVINCE



## Geography :

Located South of South China Sea and borders with Riau, Singapore, Malaysia, South Sumatera, Jambi and West Kalimantan  
251,810.71 Square Km (25,181,071 Ha)



# BACKGROUND - FREE TRADE ZONE (FTZ)



## FTZ definition :

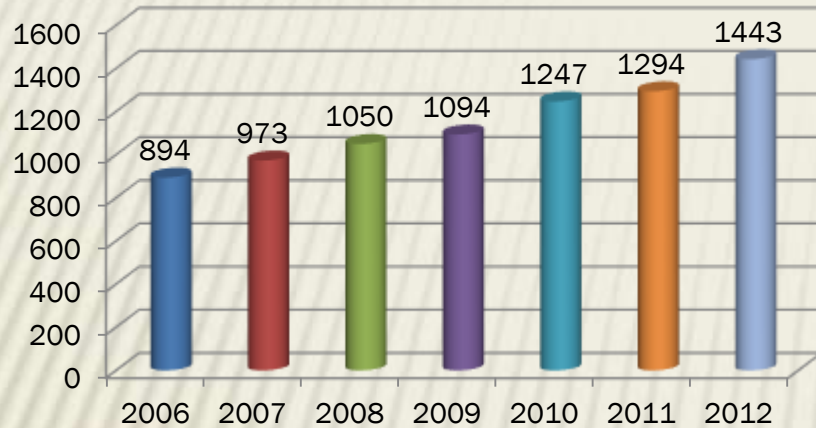
“An area within the jurisdiction of the republic of Indonesia which is exempted from import duties, sales tax, value added tax and tax on luxurious goods, and any customs duties”

On 19th January 2009, the President of the Republic of Indonesia officially launched Batam-Bintan-Karimun as Free Trade Zone which started to commence on 1st April 2009, based on the Ministry of Finance Regulations No. 45, 46, and 47.

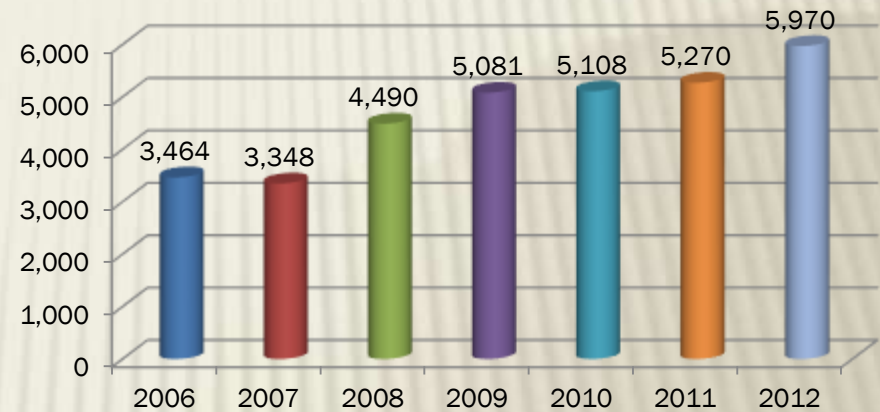


# INVESTMENT - INDUSTRIES

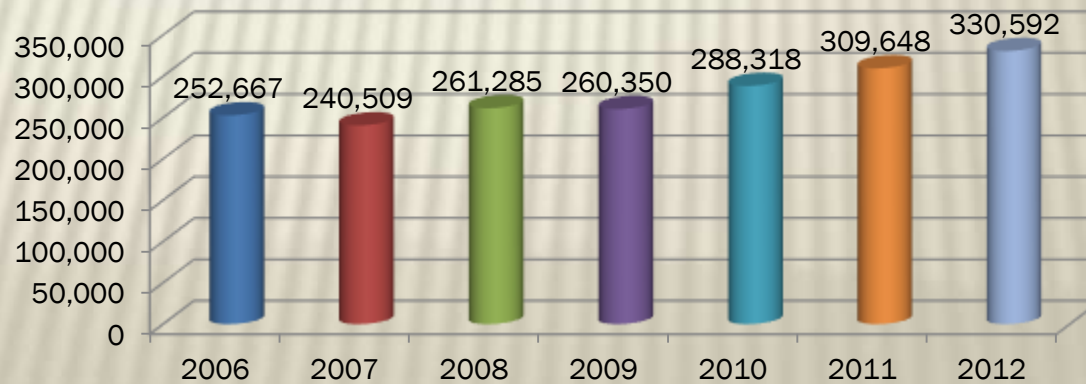
Foreign Companies Cumulative



Foreign Work Force



Indonesian Work Force



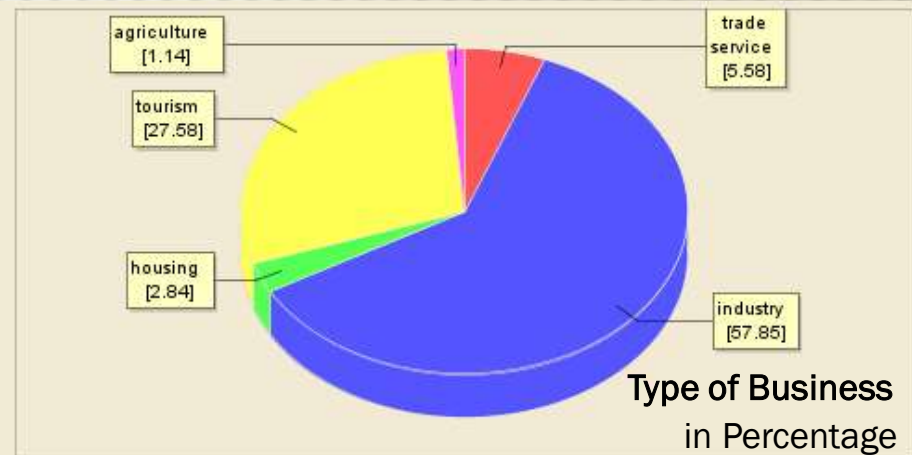
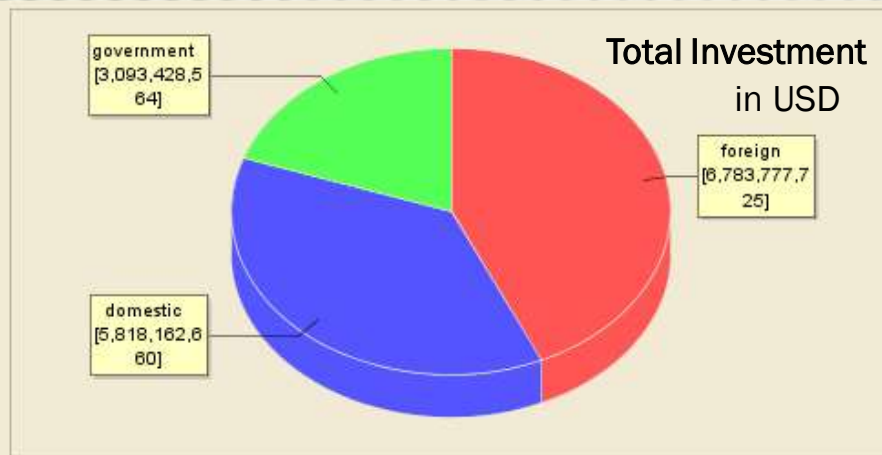
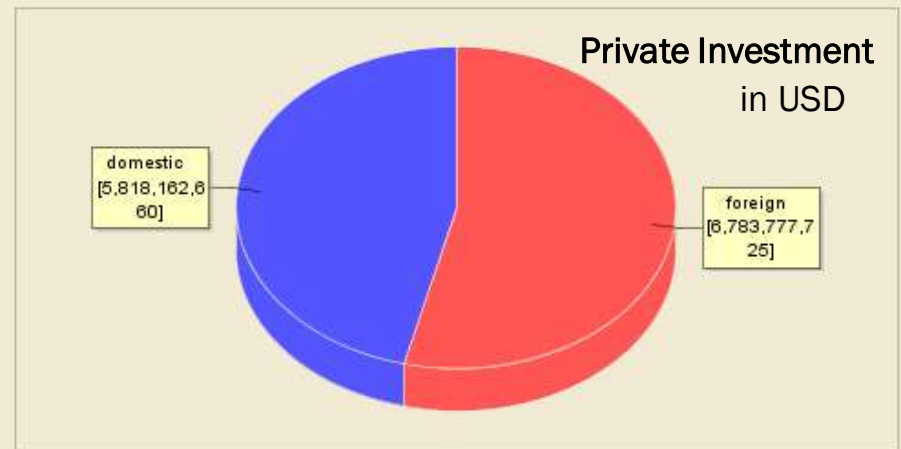
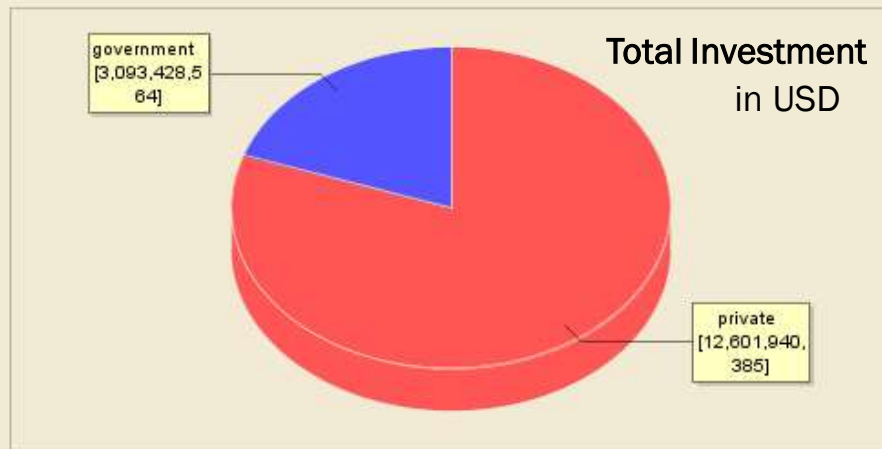
# INVESTMENT - INDUSTRIAL ESTATES

There are 21 industrial estates in Batam :

1. Union Industrial Park
2. Tunas Industrial Estate
3. Taiwan International Park
4. Sarana Industrial Point
5. Puri Industrial Park 2000
6. Panbil Industrial Estate
7. Megacipta Industrial Park
8. Malindo Cipta Perkasa
9. Latrade Industrial Park
10. Kawasan Sekupang Makmur Abadi
11. Kawasan Bintang Industri II
12. Kara Industrial Park
13. Kabil Industrial Estate
14. Indah Industrial Park
15. Hijrah Industrial Estate
16. Executive Industrial Park
17. Citra Buana Industrial Park Phase I
18. Citra Buana Centre Park Phase III
19. Citra Buana Centre Park Phase II
20. Cammo Industrial Park
21. Batamindo Industrial Park



# INVESTMENT UP TO DECEMBER 2012

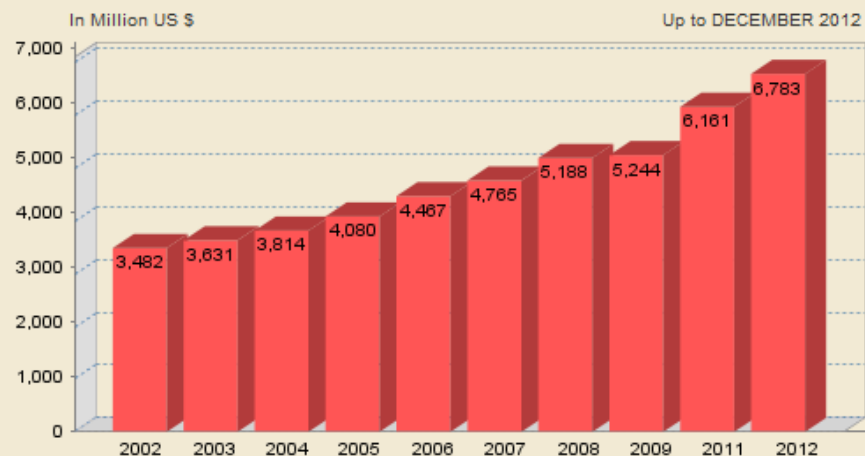


# INVESTMENT – INVESTMENT STATISTIC

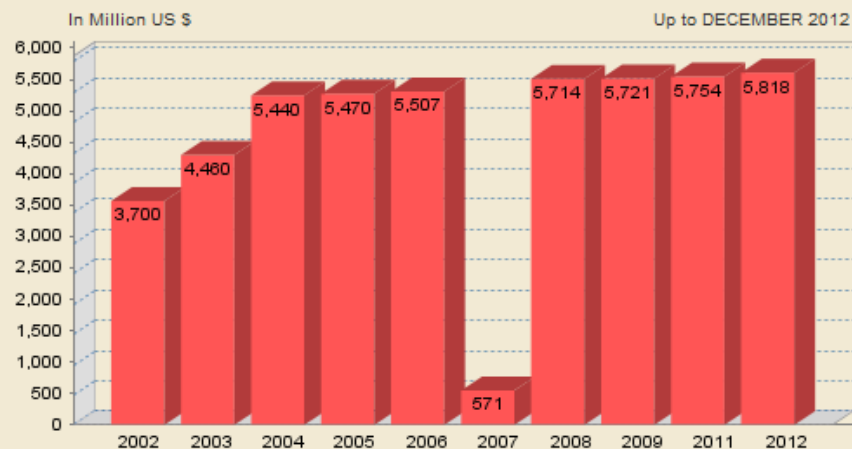
## 1 Government Investment



## 2 Foreign Private Investment



## 3 Domestic Private Investment

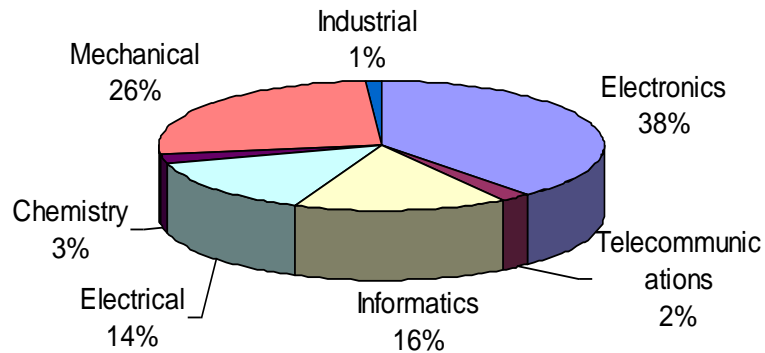


## 4 Private Investment Growth (Domestic & Foreign)

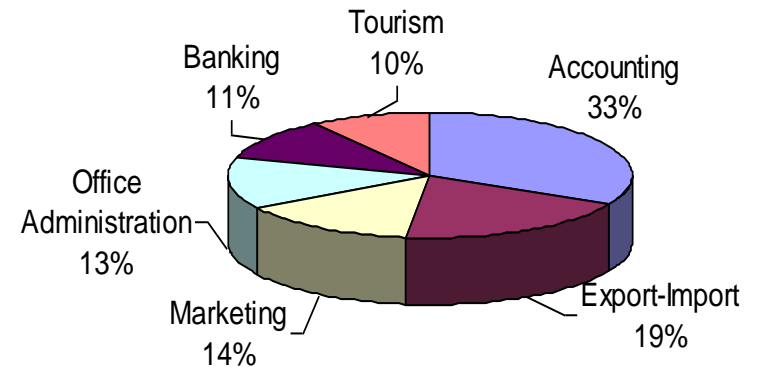


# SKILLS NEEDED BY INDUSTRIES

**Engineering Skills needed by Batam's Industries**



**Non Engineering Skills needed by Batam's Industries**



No	Skills	
	Engineering	Non-Engineering
1	Electronics	Accounting
2	Mechanical	Export-Import
3	Informatics	Marketing
4	Electrical	Office Administration
5	Chemistry	Banking
6	Telecommunication	Tourism

Source: LAPI's Survey, 2000



# BATAM STATE POLYTECHNIC



Officially established by Ministry of National Education of Indonesia on January 26, 2001 (SK No. 235/D/O/2000) with its three study programs:

- × Electronics
- × Informatics
- × Accounting

Government through the Minister of National Education No. 26 of 2010 stipulates Batam Polytechnic become state universities with names Batam State Polytechnic.

# STUDY PROGRAMS

To meet the workforce needs, Batam State Polytechnic add 5 more study programs. Now, there are 8 study programs :

- + Mechanical Engineering
- + Electronics Engineering
- + Mechatronics
- + Informatics
- + Multimedia and Network Engineering
- + Accounting
- + Managerial Accounting
- + Business Administration





# BATAM STRATEGIC DEVELOPMENT

- Provide or facilitate seed/ venture capital
- Grants/ loans
- Incentives to global majors to set up operations locally
- Credit financing assistance

- Map and provision skills requirements of focus industries to required skills
- Develop managerial capacities of SMEs at a holistic level

- Harmonize federal & regional policies with single point of authority
- Sustainable policies to be mandated & enforced
- Harmonize federal & regional policies related to maritime & sea port management
- Harmonize federal & regional policies related to FTZ expansion

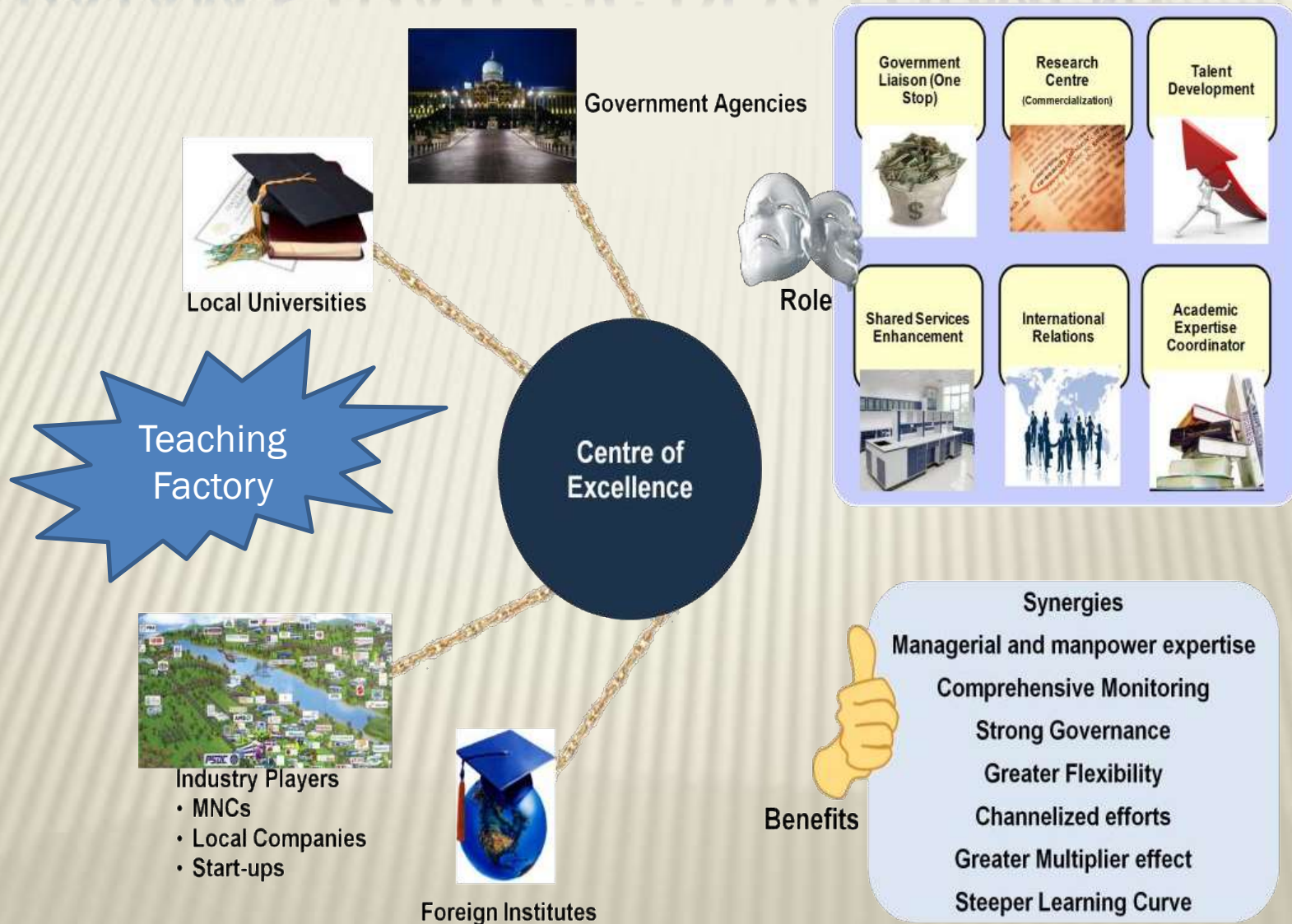


- Develop required infrastructure for the focus industries
- Form incubation centers to promote SMEs
- Explore partnerships with national/ international institutes (Develop R&D facilities)
- Improve waste management system for target industries
- Labeling & testing facilities
- Sustainable town planning
- Facilitate the development of Centre of Excellence for focus industries

- Develop Marketing Plan with measurable target outcomes
- Establish presence on various relevant platforms to create higher brand value



# BATAM STRATEGIC DEVELOPMENT



# TEACHING FACTORY



## IC Packaging

- Silicon Wafer: diameter 300 mm
- Packaged IC: TQFP 100 pins
- Capacity : 4000 chip per 8 hours



## PCB Manufacturing

- Up to 6 layers
- 150  $\mu$ m (track width), 0.3 mm (trough hole)
- Capacity : 3 PCBs (A4) single layer, or 2 PCBs (A4) double layers, or 1 PCBs four/eight layers per 8 hours



## PCB Assembly

- Chip 1608 : 21,000 CPH,
- SOP : 15,000 CPH,
- QFP : 5,500 CPH
- Capacity : 500 PCBs per 8 hours

# CLEAN ROOM FACILITY



Class 10.000 for IC Packaging  
Class 100.000 for PCB Manufacturing



Particle count/ft<sup>3</sup> (>0.5um) : 322



Surface resistivity : 1.51 Ohm



# IC PACKAGING EQUIPMENT



Wafer Dicing

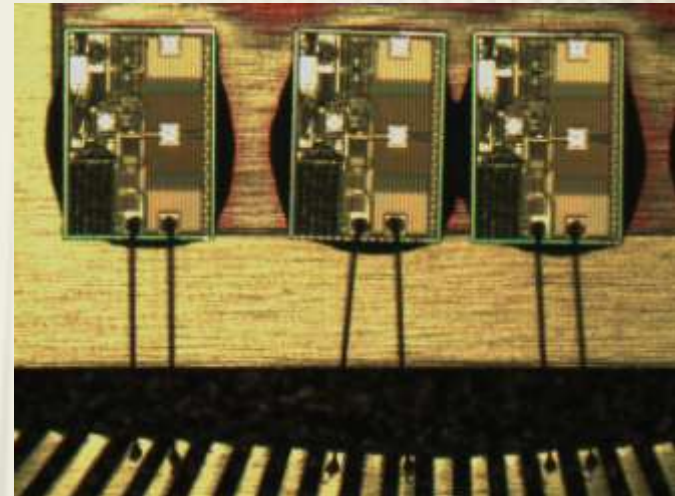


Die Bonder

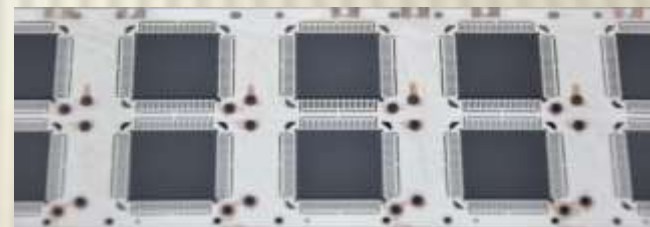


Semi Automatic Die Handler

# IC PACKAGING EQUIPMENT

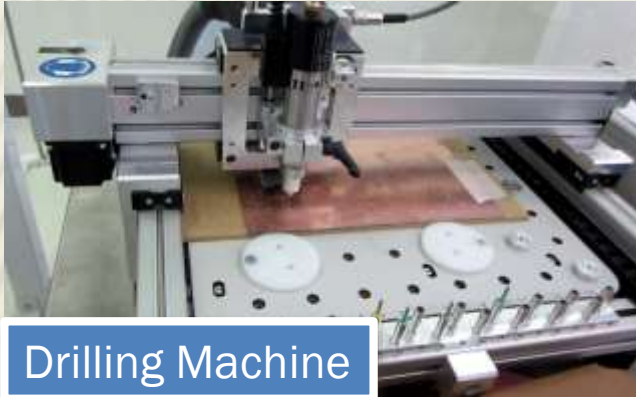


Wire Diameter : 0.8 to 1.2 mil  
1 mil = 25.4  $\mu$ m





# PCB MANUFACTURING EQUIPMENT



Drilling Machine



Through hole Plating



UV Exposure



UV Exposure



Developer



Etching



# PCB ASSEMBLY EQUIPMENT



Solder Paste Printing

- Max. Board (L x W) : 460 x 400 mm
- Min. Board (L x W) : 50 x 50 mm
- Print Speed Range : max. 200 mm/sec



Component Mounter

- Placement Rate (Flying Vision) :
- Chip 1608 : 21,000 CPH,
  - SOP : 15,000 CPH,
  - QFP : 5,500 CPH

- Board Dimension :
- min. 50 (L) x 40 (W)
  - max. 460 (L) x 400 (W)

- Placement Accuracy :
- Chip :  $\pm 50 \mu\text{m}$
  - QFP :  $\pm 30 \mu\text{m}$



Reflow Oven



Lead Free Soldering

## **Service and Information Center:**

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