



# Sino-American Silicon Products Inc.

Doris Hsu, CEO April 12<sup>th</sup>, 2012

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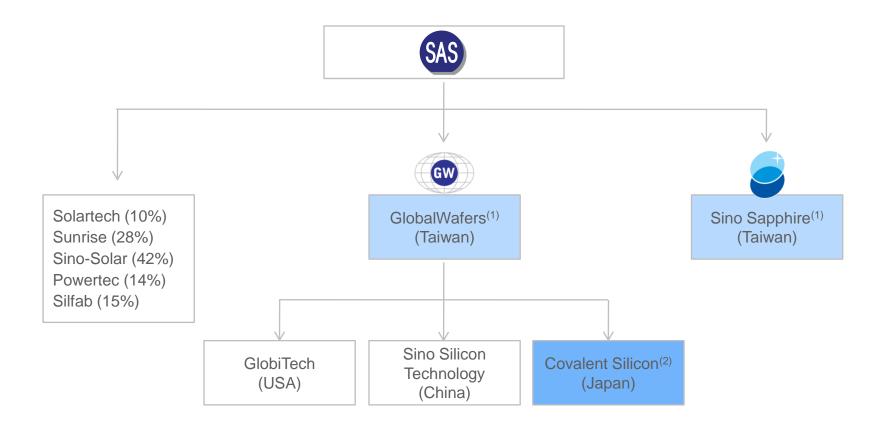
## CONTEXT



- Diversified Businesses to Capture Growth and Hedge Volatility
- Semiconductor Industry Develops and Blooms
- Covalent Silicon: Leading Provider of Silicon Wafers
- Acquisition Synergies
- SAS Management Strategies and Business Outlook

# SAS New Structure Post Spin-off and Acquisition



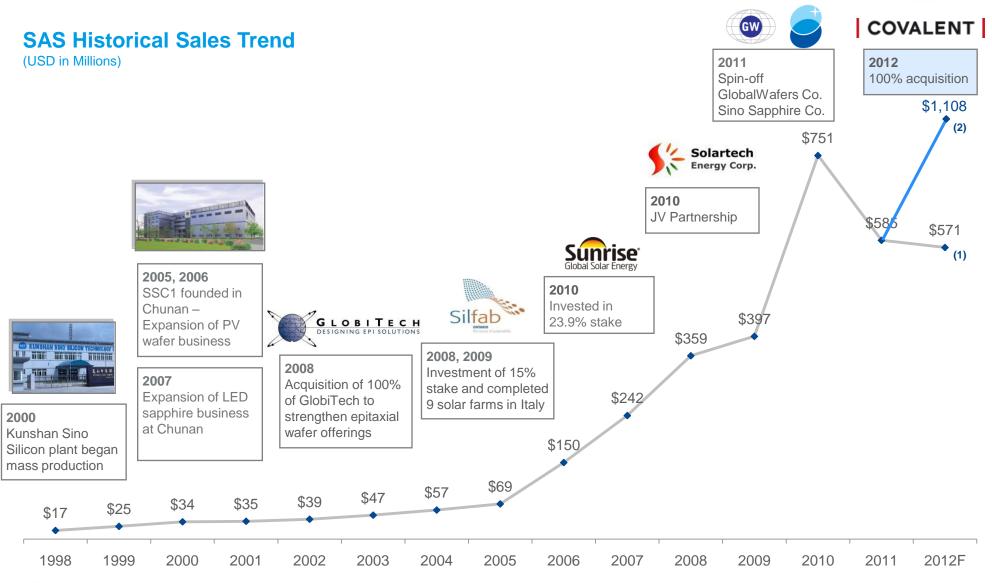


- (1) Spin-off completed on 1st October, 2011.
- (2) Covalent Silicon is transferred to GlobalWafers Co. on 29th March, 2012.



## Journey to a Global Wafer Leader





- SAS 中美的晶製品股份有限公司 Sillog-American Sillogn Products Inc.
- SAS Bloomberg consensus estimate
- 2) Pro Forma revenue based on SAS Bloomberg estimate plus Covalent Silicon average revenue from FY2009-2011 of \$ 537mn.

# **2011 Key Financial Figures**



NTD in Thousands

Consolidated I/S	2011	2010
Revenue	17,549,063	22,528,702
Gross Profit	1,735,299	5,530,813
Operating Profit	754,649	4,264,467
Net Profit before tax	562,344	4,084,762
Net Profit after tax	428,706	3,568,609
EPS	1.02	10.5

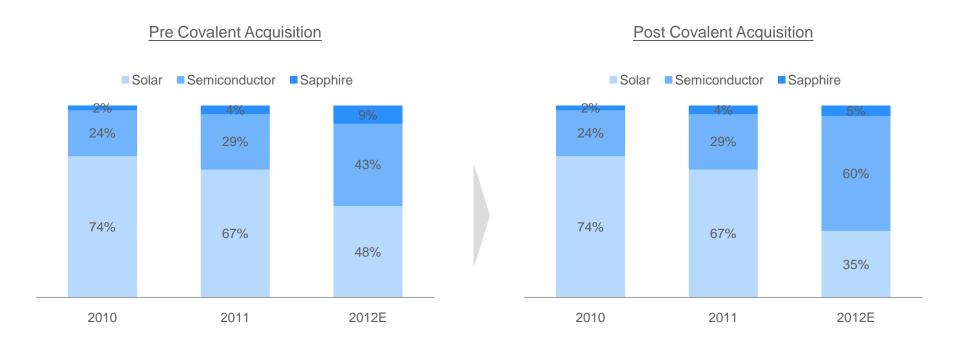
Consolidated B/S	2011	2010	
Current Ratio	158.4%	219.2%	
Debt Ratio	35.5%	40.4%	



## **SAS Diversified Businesses**



#### **Revenue Breakdown by Product**



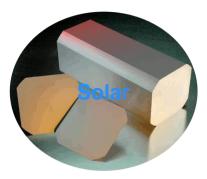
SAS' diversified portfolio after acquisition of Covalent enables itself to capture the growth in semiconductor and hedge the volatility in solar industry.

## 2012 Q1 Business Dynamics





- Currently, the clearest visibility till Jun, since Q3, 2011.
- GlobiTech capacity went full loaded from Mar. to drive upstream shipment in GWC(Taiwan) and SST(china).
- MoM revenue growth expected after Q1.
- B/B >1 from Mar.



- Significant market demand rebound on high efficiency product to boost ASP up from latter part of Jan.
- Germany subsidy cut and Euro zone debt crisis concern shadowed the industry sentiment and weigh on the market demand.
- SAS keep a cautious attitude towards separate order to make sure the pricing to meet manufacturing cost criteria consideration.



- Bottom up since Nov. 2011 to see sharp revenue growth MoM.
- PSS products over 90% shipment.
- Growing market demand to trigger ASP gradually upward.
- Expansion launched.

## **Vertical Integration in the Solar Business**



#### **Strategic Investment in Value Chain**





Location: Taiwan Ownership: 14% Main Product: Poly Si

Capacity: 6,000 tons in the first stage





Location: Taiwan Ownership: 10%

Main Product: Polycrystalline Cell

Capacity: 576MW in 2011



Location: Taiwan Ownership: 15% (28%)

Main Product: Monocrystalline Cell

Capacity: 650MW in 2011



Location: Italy Ownership: 15%

Main Product: module plant in

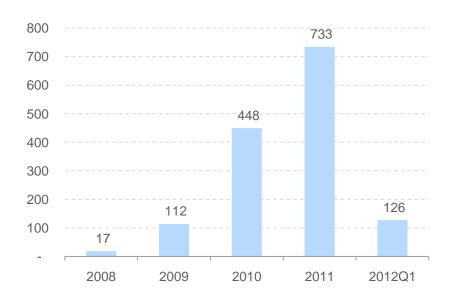
Italy and Canada



## **Strong Demand in Sapphire Business**



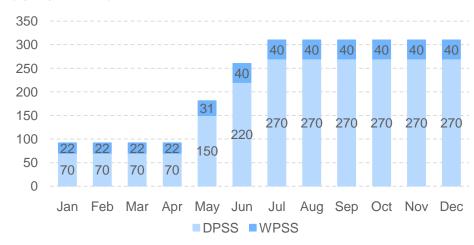
#### Revenue Growth Path (NTD in Millions)



- 2011 Q4 is the valley in the market cycle.
- LED demand is going to recover and boom from now on; 2012 Q1 QoQ +59.8%.

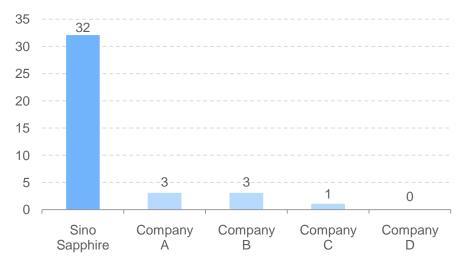
#### **2012 Capacity Expansion**





### **Patent Recognized Compared to Peers**

(Number, 2005~2012Q1)





## CONTEXT



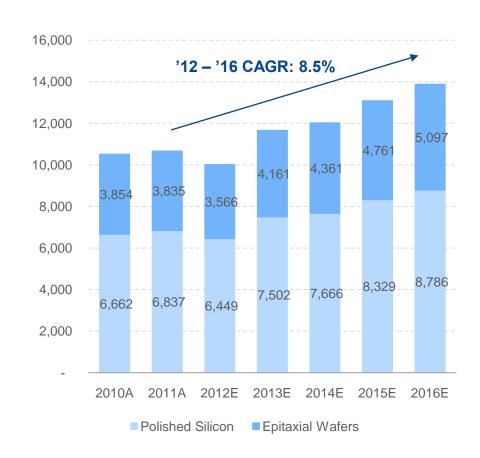
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## **Steady Silicon Wafer Industry Outlook**



#### **Silicon Wafer Market Revenue Forecast**

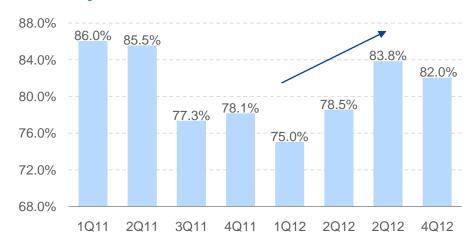
(USD in Millions)



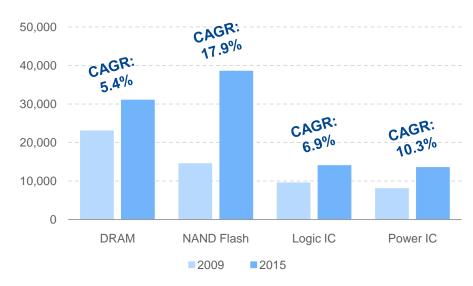
Source: Gartner 1Q2012

# SAS 中美矽晶製品股份有限公司 Sino-American Silicon Products Inc.

#### **Foundry Utilization Rates Have Recovered**



#### **End Market Growth Forecasts** (USD in Millions)

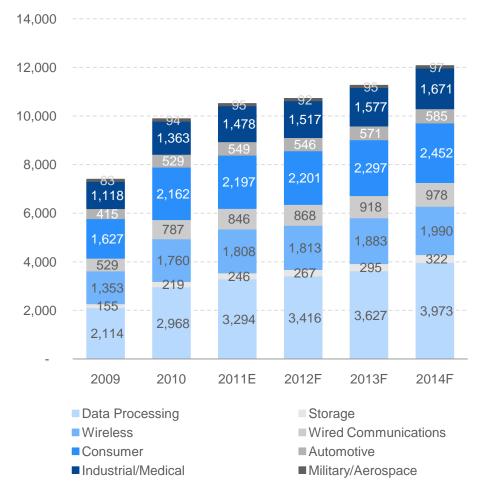


## Power IC and Memory IC Revenue Breakdown



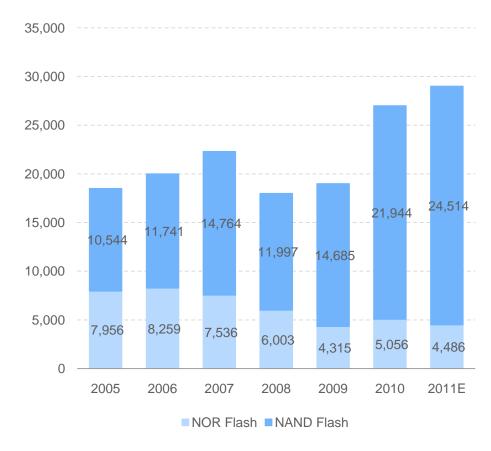
#### **Power IC Revenue Forecast Breakdown**

(USD in Millions)



#### **Memory IC Revenue Forecast Breakdown**

(USD in Millions)



Source: Gartner, SIA



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## **Transaction Overview**



# **Transaction Description**

- Covalent Materials Corporation ("Covalent Materials") transfers all relevant wafer assets to Covalent Silicon Corporation
- SAS and Covalent Materials announced a definitive agreement for SAS to buy all ordinary shares issued by Covalent Silicon Corporation from Covalent Materials

#### Consideration

- The consideration is JPY 28 bn in cash
- Debt-free basis, inclusive of JPY 2 bn cash for working capital

#### **Financing**

- SAS plans to use excess cash on balance sheet and syndicated loan to finance the acquisition.
- Equity may be issued to repay part of the loan in the future

#### **Close Date**

• Transaction is closed on 29th March, 2012

#### Rationale

- Enhanced global market position
- World leader in specialty wafer business
- Complete product offerings
- Acquire cutting-edge semiconductor wafer technology
- Strengthen tier-1 customer base
- Revenue and cost synergies



# **Covalent Silicon: Leading Provider of Silicon Wafers**



#### **Covalent Materials**

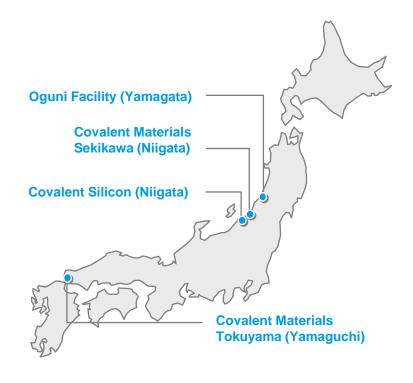
- Formerly known as Toshiba Ceramics, Covalent Materials Corporation ("CV") was established in 1968 through the merger of Toshiba Denko and Toshiba Internal Insulation
- In October of 2006, Carlyle Japan and Unison Capital launched a tender offer as part of the MBO
- Business Portfolio includes ceramics and wafer business

#### **Carved-out Covalent Silicon**

- Top tier manufacturer of specialty wafers globally
- Main products: 300mm wafers, 200mm wafers, Epitaxial wafers, and Diffused wafers
- Employees: 1,192
- Industry leading wafer technology and strong global blue chip customer base

## **Manufacturing and Distribution Sites**

- Japan: 4 manufacturing sites
   Niigata, Oguni (Yamagata), Tokuyama (Yamaguchi), Sekikawa (Niigata)
- Overseas: 6 sales offices
   San Jose, Dallas (both US), Munich (Germany), Seoul (Korea), Shanghai (China), Hsinchu (Taiwan)



Source: Covalent



# **Covalent's Product and Technology Portfolio**



	100MM	125MM	150MM	200MM	300MM	Production Site
Wafer				•	•	Covalent Silicon
Engineered Wafer				•	•	(Niigata)
Epitaxial Wafer	•	•	•	•		Covalent Silicon Tokuyama (Yamaguchi)
Diffused Wafer	•	•	•			Covalent Silicon
SOI Wafer	•	•	•			Sekikawa (Niigata)

Source: Covalent



# **Covalent's Facilities and Capacity Overview**



	Overview	Products	Capacity
Covalent Silicon (Niigata)	Established: 1991 Prefecture: Niigata Total Land: 137,965 m <sup>2</sup> Number of Employees: 863	300mm, 200mm Polished wafers and Annealed wafers	300mm: 185Kp/M 200mm: 320Kp/M Capacity increased from 300Kp/M to 320KpM due to an improved in production efficiency in FY11/3
Oguni Facility	Established: 1977 Prefecture: Yamagata Occupied Land: 26,672m² Number of Employees: 119	Single crystal ingots for 200mm and smaller diameter wafers	NA
Covalent Silicon Tokuyama	Established: 1982 Prefecture: Yamaguchi Occupied Land: 4,303 m <sup>2</sup> Number of Employees: 298	Epitaxial wafers 100mm, 125mm, 150mm, 200mm	185Kp/M
Covalent Silicon Sekikawa	Established: 1985 Prefecture: Niigata Total Land: 17,853 m² Number of Employees: 158	Diffused wafers and SOI wafers 100mm, 125mm,150mm	130Kp/M



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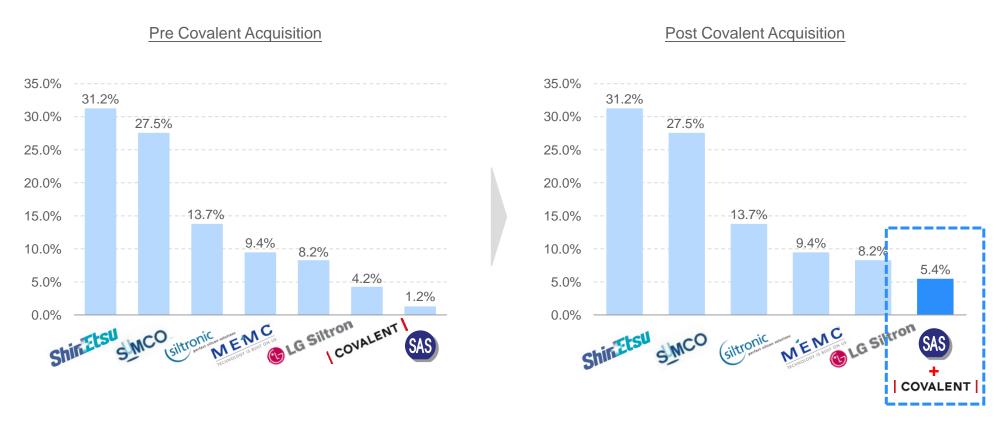


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## **Enhanced Global Market Position in Wafer Business**



#### 2010 Worldwide Merchant Silicon & Epitaxial Wafer Market Share



- Enhances global leading position in wafer manufacturing through added capacity
- Becomes the dominant No.1 wafer manufacturing company in Taiwan

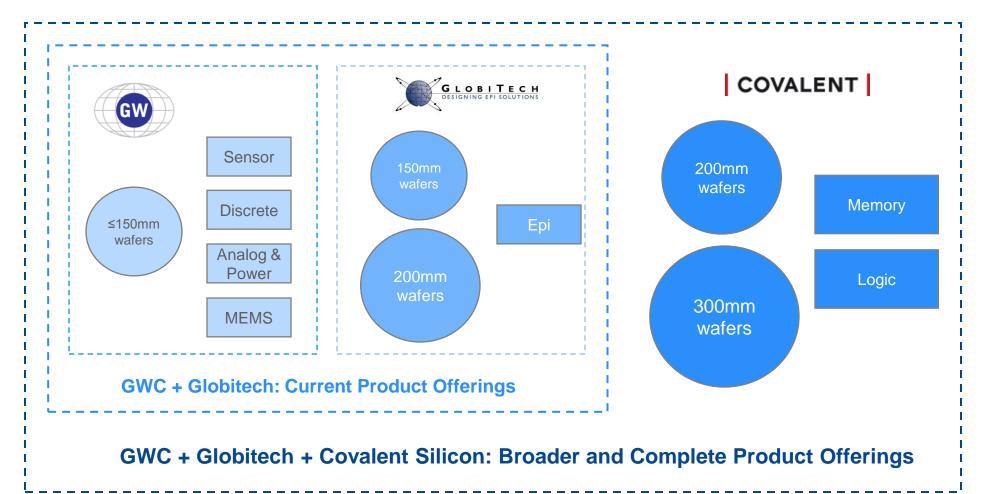
Source: Gartner.



## **Complete Product Offerings**



#### **Complementary Product Offerings in Semiconductor Wafer**



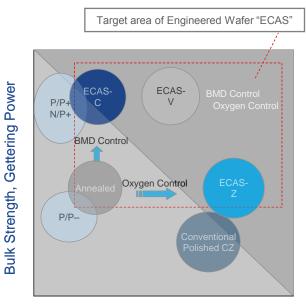


# **Acquire Cutting-Edge Technology**



#### **Superior Technology**

**Product Concept of Engineered Wafer** 

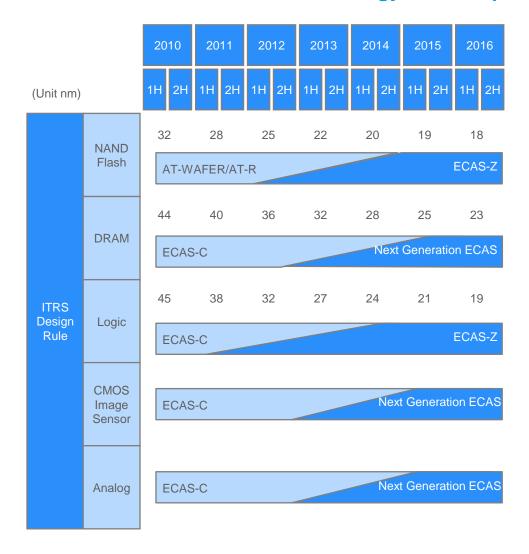


Surface Layer Strength

#### Covalent Wafer Business Core Technology

MOS	DIS
BMD Control	Defect Control
<ul> <li>COP Control</li> </ul>	Resistance Control
<ul> <li>Surface Oxygen Control</li> </ul>	<ul> <li>DW Diffusion/Processing</li> </ul>
	<ul> <li>Uniformity Technology for Epi</li> </ul>
	<ul> <li>Resistance Control Technology of Heavy Dope Crystallization</li> </ul>

#### **Covalent Wafer Business Technology Roadmap**



## **Strong Tier-1 Customer Base**



## **Adding Strong Customer Base with Tier 1 Players in Semiconductor\***

**Taiwan Japan US/Europe Panasonic** VISHAY **ROHM** ⊕ SHINDENGEN SANYO TEXAS INSTRUMENTS F Fuji Electric MIXIM MXIC **UMC** MICROCHIP COVALENT **TOSHIBA OKMETIC** Powerchip

<sup>\*</sup> List contains disclosable customers only



## **Revenue and Cost Synergies**





#### • Revenue Synergies:

- Realign customers for better profitability
- Geographical diversity
- One-stop shop / Cross-selling
- Increase ASP through joint facilities / optimization
- Scale and stability to attract customers

# Lowering Cost

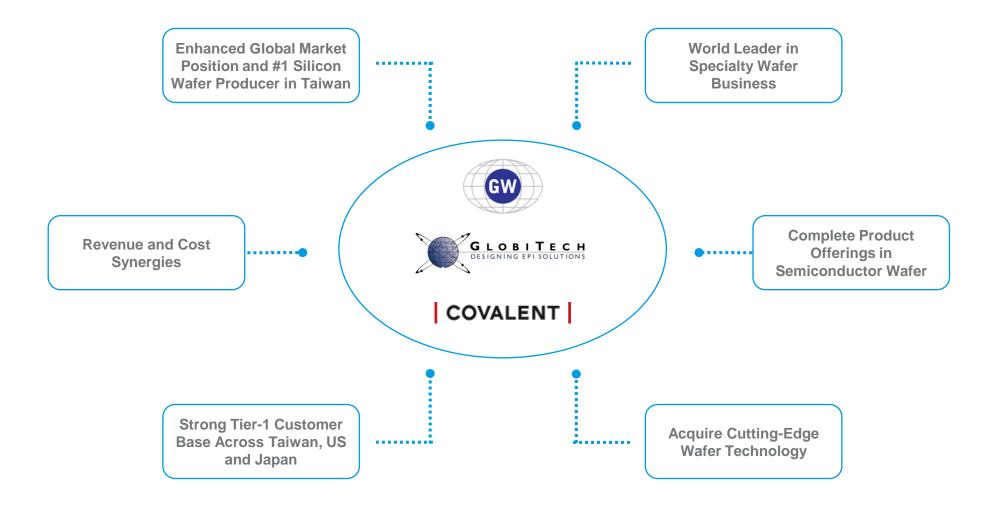
#### • Cost Synergies:

- Reduced raw material costs and better contractual arrangements
- Shared opex and R&D
- Further production expansion in lower-cost countries



## **Acquisition Transaction Rationale**







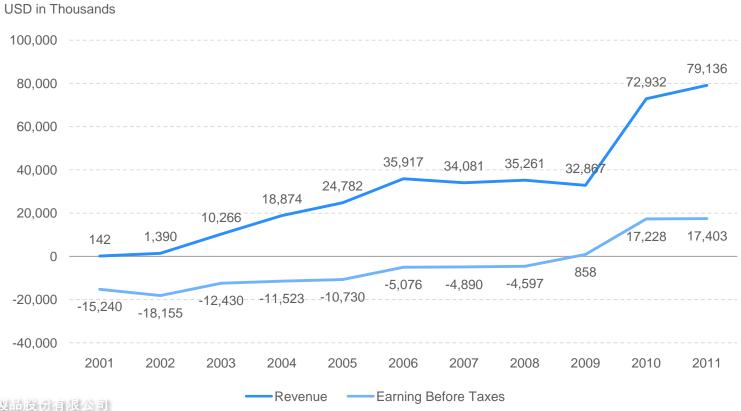
## Successful Experience: GlobiTech





- Capital in start-up: US\$ 60 Millions
- Capital increase US\$ 50 Millions to US\$110 Millions in 2004
- SAS took over in 2008, and turned it around in the following year





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# **SAS Future Management Strategies**



	Semiconductor	Solar
Technology	Gain access to Covalent's cutting-edge ECAS technology for annealed wafers for application in analog, CMOS image sensor, logic DRAM and NAND flash	<ul> <li>A+++ multicrystalline solar wafers can help improve cell efficiency by 0.6%</li> <li>SAS' technology can deliver average 17.6% conversion efficiency</li> </ul>
Manufacturing	<ul> <li>Rigorous manufacturing discipline tightens process control and product performance distribution, resulting in high yield, high quality, and less missed-operations</li> <li>Reduce material use and evaluate second sources</li> </ul>	<ul> <li>SAS is focused on increasing solar efficiency to reach nich market</li> <li>SAS is skilled at transferring complicated techniques from the semiconductor wafer production to solar and sapphire wafer production</li> </ul>
Procurement	<ul> <li>Larger economies of scale after covalent' acquisition will substantially reduce procurement costs</li> <li>Initiate in-house wafer manufacturing</li> <li>Flexible material price and volume with monthly review based on market price index</li> </ul>	<ul> <li>SAS' aggressive vertical integration helps the Company gain more bargaining power towards supplier</li> <li>The larger economies of scale is expected to lower the procurement costs</li> </ul>
Customers	<ul> <li>Acquisition of Covalent will give SAS easy access to many tier-1 customers. This significantly reduce SAS' customer development cost</li> <li>SAS can offer wafers in different types and different sizes to fulfill one-stop shopping</li> </ul>	SAS' vertical integration in solar value chain will lower sales and marketing cost to acquire new customers

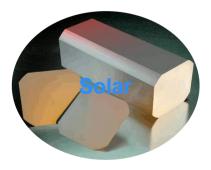


## 2012 Q2/H2 Business Outlook





 Semi sector expected to enjoy steady recover for the second half, Covalent will be helpful for business opportunity integration to reach decent synergy.



• Even with current unclear visibility, solar Industry turmoil will eventually come to a convergence as intensive market consolidation over the past quarters has forced only players with competitiveness could survive the dynamics then to build healthy equilibrium, Q4 is likely to be the bottom as the Euro Debt concern soften gradually and the emerging solar market including US/Japan/China will boost incremental growth potential to the market.



 Strong recover and Policy driven market demand will continue to inspire healthy growth for Sapphire sector, new capacity expansion brought on line in May will boost rapid revenue growth after Q2.



