

*Drawing the Future*

Chemicals • Paper • Cement • Building Materials • Distribution

info@scg.co.th

 **SCG**  
SANGHVI CEMENT GROUP

## Managing Innovation and Technology of SCG, A Case Study

Kan Trakulhoon  
President & CEO

July 19, 2010  
PICMET Conference

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## SCG Factsheet

- Founded in 1913 by King Rama VI, and listed on the Stock Exchange of Thailand since 1976.
- Major shareholder: The Crown Property Bureau
- Business Units in SCG: **Cement, Chemicals, Paper, Building Materials, Distribution, and Investment**
- Companies: **Over 120**
- In 2009, Total net sales: **\$7.2 Billion**
- Total employees: **28,568**



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## SCG Products

The collage features various SCG products: paint cans, rolls of paper, sanitary ware (COTTO brand), bags of cement, and a cement truck. The text 'SCG Products' is prominently displayed at the top.

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## Evolution of Business Strategies

1913 - 1970	1970's - 1980's	1980's - 1990's	1998 - 2003	2004 - Onwards
Organic Growth in construction material industries	Take over of "ailing" industries	Entry into new industries	Concentration on Competitive Platforms	Regional Moves & Innovation
"Historic roots"	"Opportunistic investment in assets"	"Joint venture partner of choice"	After the crisis "Restructure Business Unit"	High Value Added products and services
<ul style="list-style-type: none"> <li><input type="checkbox"/> Cement</li> <li><input type="checkbox"/> Construction Materials</li> <li><input type="checkbox"/> Steel</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Cement</li> <li><input type="checkbox"/> Construction Materials</li> <li><input type="checkbox"/> Steel</li> <li> </li> <li><input type="checkbox"/> Ceramics</li> <li><input type="checkbox"/> Paper &amp; Packaging</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Cement</li> <li><input type="checkbox"/> Construction Materials</li> <li><input type="checkbox"/> Steel</li> <li> </li> <li><input type="checkbox"/> Ceramics</li> <li><input type="checkbox"/> Paper &amp; Packaging</li> <li> </li> <li><input type="checkbox"/> Petrochemicals</li> <li><input type="checkbox"/> Automotive</li> <li><input type="checkbox"/> Electrical</li> </ul>		

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## SCG's Vision Our People... Drawing the Future

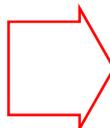
By the year 2015, SCG will be well recognized as an *innovative workplace of choice*, and a *role model in corporate governance and sustainable development*.

We see SCG as a *regional market leader*, contributing to the sustainable progress of ASEAN, and the local communities where SCG operates.

## SCG Competitive Landscape

### The old playing field

- Territory: **Domestic**
- Product: **Commodity-based**
- Focus: **Cost leadership**



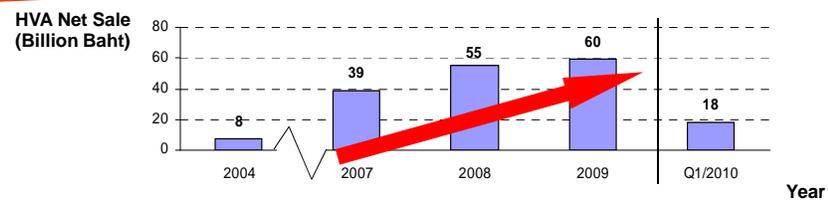
### The new playing field

- Territory: **ASEAN**
- Product: **High Value Added products/services**
- Focus: **Technology, Green Initiative, Brand**

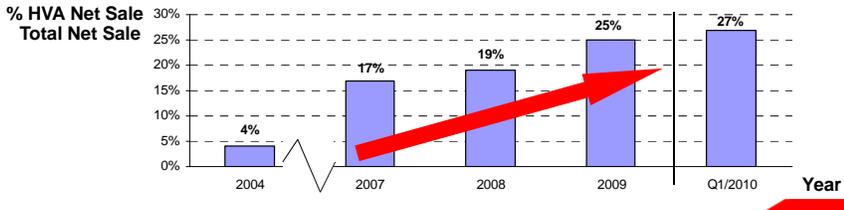
- Increase customer satisfaction
- Differentiate from the competitors
- Compete on Value to Customers, not price

**HVA**  
High Value Added products  
and services

**Innovation through R&D helps us transform commodities to unique high value added products and services**



**HVA Contributed almost 30% of SCG total sales in Q1, 2010**



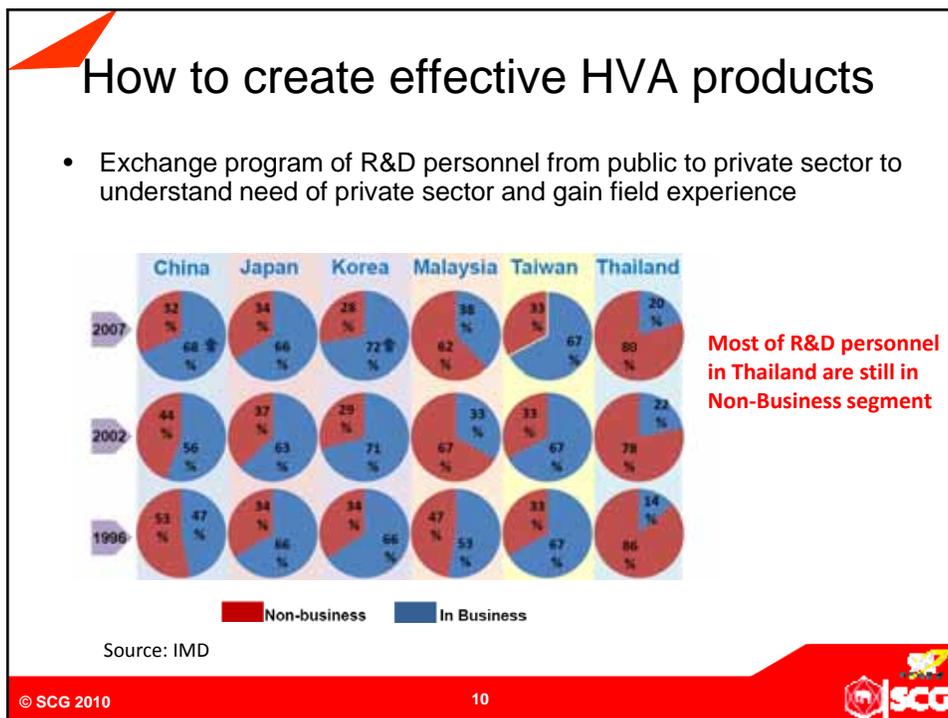
Note: Including associates

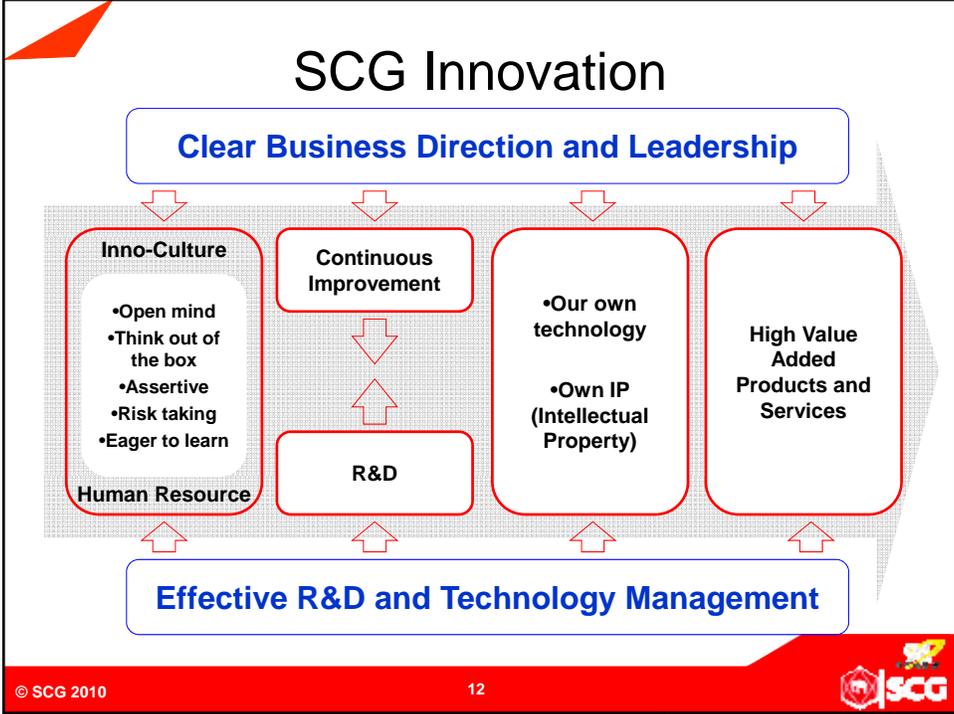
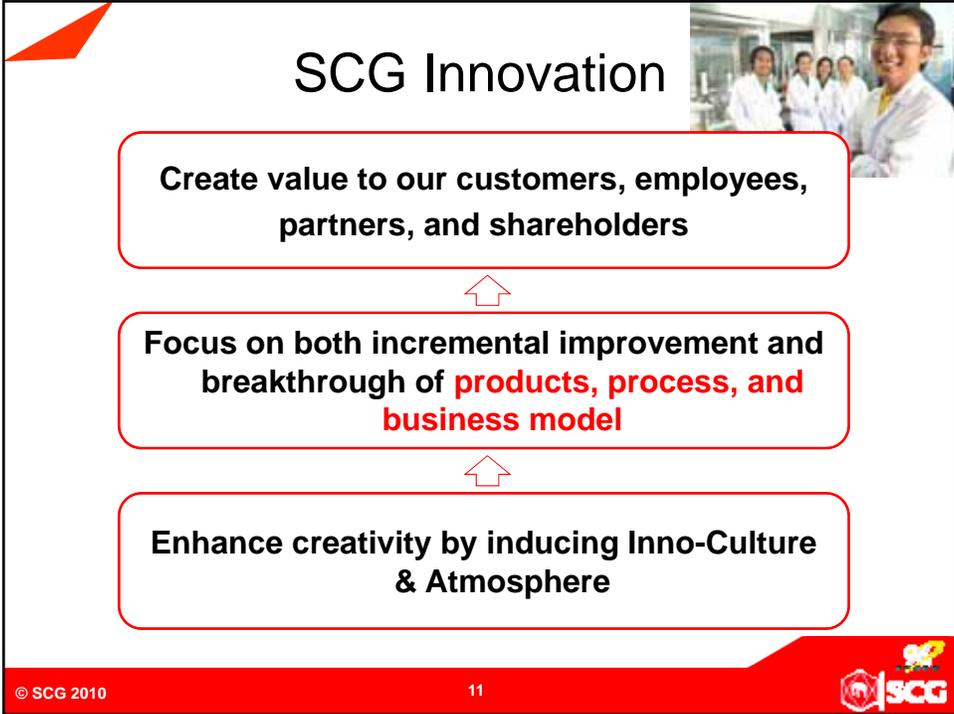
### R&D Expenditure 2007

	Country	R&D Expenditure as % of GDP (2007)	% of R&D Expenditure contributed by	
			Public	Private
Second Tier	Thailand	0.24	57%	43%
	Malaysia	0.63	28%	72%
	China	1.34	33%	67%
First Tier	Singapore	2.36	36%	64%
	Taiwan	2.52	35%	65%
Advance Countries	Korea	2.99	23%	77%
	Japan	3.33	24%	76%
	Finland	3.48	29%	71%

Source: 1. OECD, Main Science and Technology Indicators, May 2007  
 2. Malaysia Science and Technology Information Center (MASTIC)  
 3. NRCT & NSTDA

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# Innovation Management System

R&D	Collaboration	IP
<ul style="list-style-type: none"> <li>R&amp;D Project Management</li> <li>Portfolio Management</li> <li>Resource Allocation</li> <li>Human Resource Management</li> </ul>	<ul style="list-style-type: none"> <li>Open Innovation</li> <li>Fit &amp; Strategic Partners</li> <li>Community of Practice</li> </ul>	<ul style="list-style-type: none"> <li>IP Creation</li> <li>IP Protection</li> <li>IP Commercialization</li> </ul>

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→
  
**IT Infrastructure**

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# Capability Development

By 2015...with the full involvement of our people about 50% of our revenues will come from HVA

### R&D for HVA Staff

Year	Staff Count
2007	364
2010	882

### Our People

- R&D for HVA Staff
  - 2010: 882 persons (PhD 40 persons)
  - 2007: 364 persons (PhD 9 persons)

### Recruitment

- Project Based Recruitment
- Innovative Organization Brand
- PhD Internship
- Networks and Collaboration with leading Universities

### Development

- Technical Mentoring program
- Development Program for R&D Staff

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# SCG Technology Management

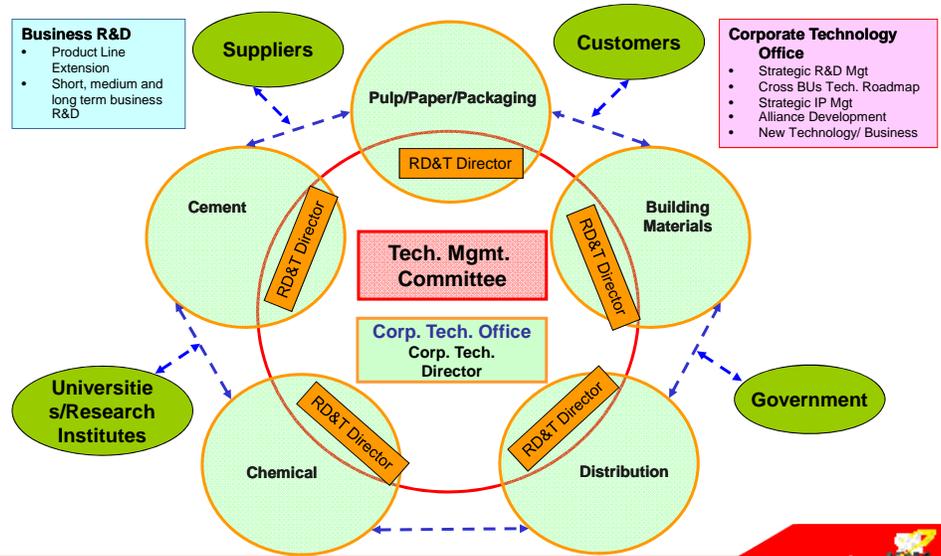
- Objectives:**
- Create capability to develop own technology & IP
  - Promote visibility & critical mass of R&D career
  - Encourage synergy among business units

- Structure:**
- R&D Centers at business units
  - Corporate Technology Office (CTech) at SCG Headquarter
  - Technology Management Committee

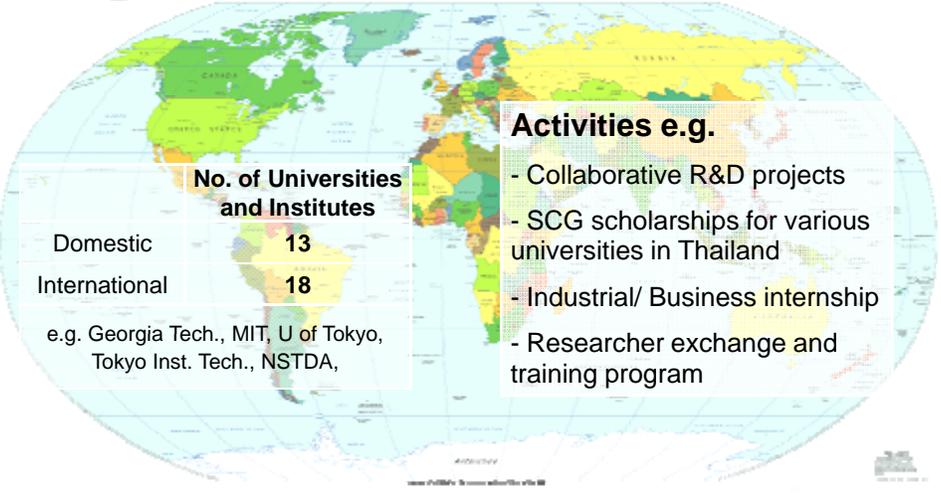
**System: Alignment between business strategy**



# SCG R&D and Technology Scheme



# Thailand & Global Collaboration with Universities and Research Institutes



**No. of Universities and Institutes**

Domestic	13
International	18

e.g. Georgia Tech., MIT, U of Tokyo, Tokyo Inst. Tech., NSTDA,

**Activities e.g.**

- Collaborative R&D projects
- SCG scholarships for various universities in Thailand
- Industrial/ Business internship
- Researcher exchange and training program

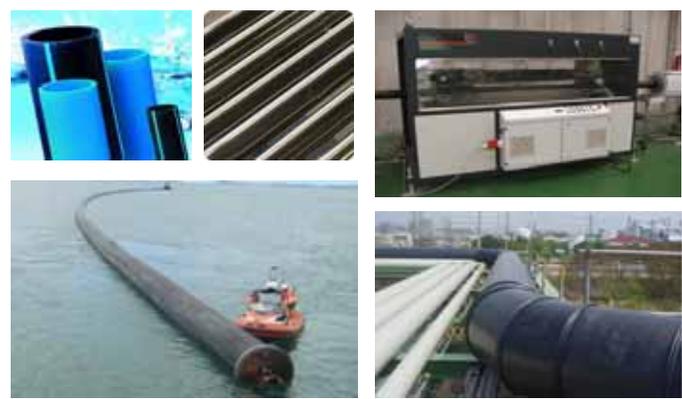
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# Inno-Products and Inno-Awards

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# SCG Chemicals

- SCG Chemicals developed PE 100+ Pipe, flexible & no rust pipe – **The first in ASEAN and the second in Asia**



# SCG Cement

- Tiger Mortar: Color render cement



# SCG Cement

- Agricultural Drying Yard Concrete (CPAC)
- An innovation product to accelerate drying of agricultural products on concrete floor
- Shorten drying period of agro-products



# SCG Building Materials

- Smart wood: Wood substitute products



## SCG HEIM: Home Technology for Superior Quality of Living



**Superior Technology Only at SCG HEIM**

- Modular system
- Air tightness system
- Insulated Double – Glazing for windows
- New exterior wall
- Air factory system



- Own SCG HEIM House within 3-4 months
- Low Life Cycle Cost e.g. utility cost, maintenance

	House Design	1 Month
	Foundation & Production	
	House Installation	1-2 Days
	House Finishing & Interier	
		45 Days



**The 3Cs Concept for Better Living: Concept, Confidence, and Convenience**

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## SCG Paper

### Innovative Printing & Writing Paper

- The First Innovative, Environmental Friendly Printing and Writing Paper
- With **Eco Fiber**, Idea Green reduces the usage of Tree by 30%
- **Idea Green** received MATT Award by Marketing Association of Thailand in November 2008





\*Marketing Association of Thailand

- **Idea Work**, Super Premium Quality Office Paper with New Matrix Fiber Structure and Nano Coating Formula

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# SCG Paper: Eucalyptus

New hybrid-strain development **achieved in 5 years**  
(normally 11 years)

Properties:

- **Resist to plant disease, arid climate**
- Suitable for plantation on hard soil
- **Fast growing with higher yield**
- **High wood content** for pulp production



# SCG Experience: SCG Flagship Store

- In-dept & Inspiring People
- Efficient & Innovative Process
- Inspiring Physical Environment



Green Initiative is a key trend in the world

### SCG eco value



- **eco** = Ecology + Economy  
Balance and Sustainable relationship of economy, society and ecology
- **value**  
Value for stakeholders, society and environment received from innovative products and services



Cool Roof System



Activ-Flow: Reduce energy in formation process



Green Read: Eye-cared Paper



Elephant Cement: Corrosion Resistance

> 80 products with sales of 34,000 Million Baht (14% of total sales)

## SCG eco value

**Green Logistic by SCG LOGISTICS**

Reduce Green House Gas and fuel consumption by 3%/Transportation ton



Exhibition (from Corrugated Containers): Furniture for exhibition, e.g. shelf and podium




Text Pro Creamy (for textbook printing): Low weight and low light reflection for long reading, and lower CO<sub>2</sub> from production process

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## SCG eco value



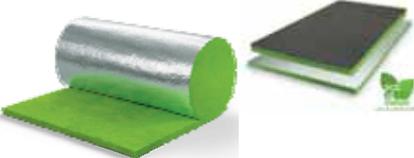
**Sound Insulation**



The product contains recycled contents greater than 70% by weight (100% natural sand substitution)




**Heat Insulation**



In addition to saving energy, the product contains recycled contents greater than 80% by weight (100% natural sand substitution)

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## Summary

- Alignment between business and technology strategy is important.
- A company without R&D will hardly survive in the future.
- Smart R&D project give rise to innovation.
- Company's R&D will not be sustained without external science and technology collaboration (University and Research Institutes).
- Government must play a vital role in nurturing R&D activities in the country

## From SCG Experience

***“R&D is a source of competitive advantage, wealth, and growth of SCG... and will be a solid foundation for future economic growth of Thailand and ASEAN.”***

Kan Trakulhoon

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Thank you

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