

# **TRIZ in SCG**

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## **Position paper presentation**

### **Content**

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- ☐ **About us**
- ☐ **About SCG**
- ☐ **What we want to do with TRIZ**
- ☐ **Introducing TRIZ in SCG**
- ☐ **Q&A**

## Who are we?



**Ms. Chiraphon Rayakaeo:**

- ☐ **Position:** marketing executive of market development section
- ☐ **Company:** SCG PAPER PLC.
- ☐ **Mission:** To develop new potential products (collect information to assess market opportunity and coordinated R&D Center)
- ☐ **Area of interest:**
  - **Quality Assurance (QA)**
  - **Task Achieving QC Story**
  - **Quality Function Deployment (QFD)**
  - **TRIZ**

## Who are we?



**Mr. Yuthapong Matejitkul:**

- ☐ **Position:** BU Technology Coordinator, Product and Technology Development Center
- ☐ **Company:** SCG PAPER PLC.
- ☐ **Mission:** Research planning, facilitate to build technology roadmap to determine the focus research areas, build the strategic research network to enhance R&D capability
- ☐ **Area of interest:**
  - **Technology Roadmap (TRM)**
  - **Research Management**
  - **Knowledge Management (KM)**
  - **Quality Function Deployment (QFD) and TRIZ**

## Who are we?



**Mr. Saranya Chandravat:**

- ☐ **Position: Executive Consultant of Corporate Total Quality Promotion Center**
- ☐ **Company: The Siam Cement PLC**
- ☐ **Mission: Provide consultation services to Business Units of SCG**
- ☐ **Area of interest:**
  - **Total Quality Management (TQM)**
  - **Total Productivity Management (TPM)**
  - **Quality Function Deployment (QFD)**
  - **Failure Mode Effect Analysis (FMEA)**
  - **TRIZ**

## Who are we?

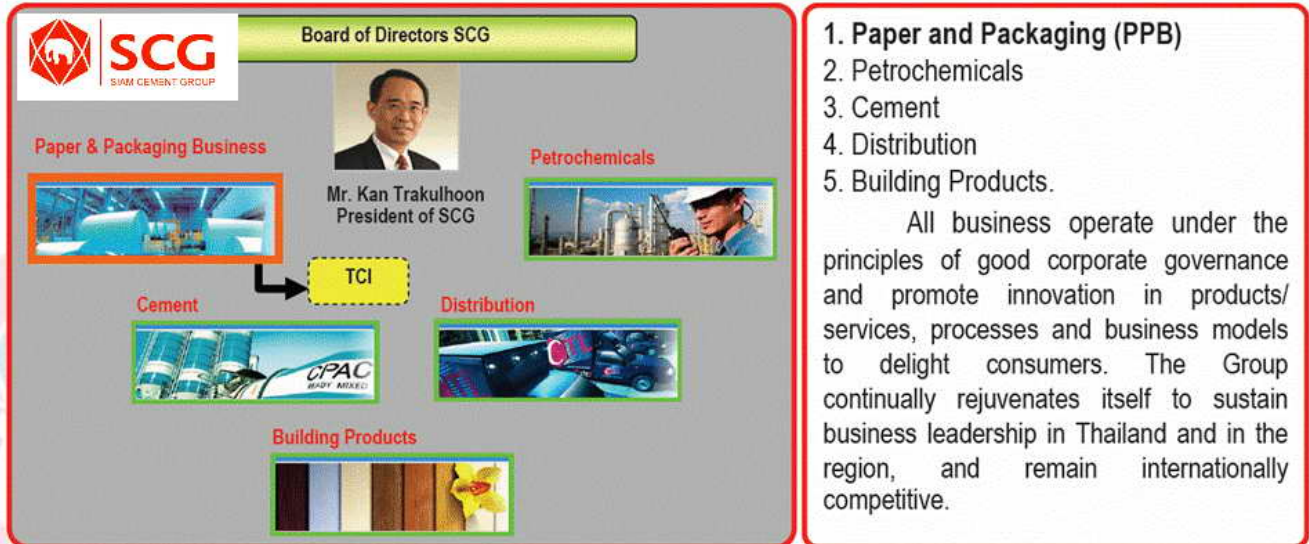


**Ms. Kritaya Suparnpongs:**

- ☐ **Position: Executive Consultant of Corporate Total Quality Promotion Center**
- ☐ **Company: The Siam Cement PLC**
- ☐ **Mission: Provide consultation services to Business Units of SCG and support technical tools for other consultants of TQPC**
- ☐ **Area of interest:**
  - **Quality Assurance (QA)**
  - **Task Achieving QC Story**
  - **Quality Function Deployment (QFD)**
  - **Attractive Quality Creation (AQC)**
  - **Technology Roadmap (TRM)**
  - **Knowledge Management (KM)**
  - **TRIZ**

# Who is SCG?

**Siam Cement Group (SCG)** was founded under the Royal Decree of His Majesty King Rama VI in 1913 as the nation's first cement producer, a construction material critical to national development. The group has expanded continuously since that time, became the largest and most advanced industrial conglomerate in Thailand with five strategic business units :



## 1. Paper and Packaging (PPB)

2. Petrochemicals
3. Cement
4. Distribution
5. Building Products.

All business operate under the principles of good corporate governance and promote innovation in products/ services, processes and business models to delight consumers. The Group continually rejuvenates itself to sustain business leadership in Thailand and in the region, and remain internationally competitive.

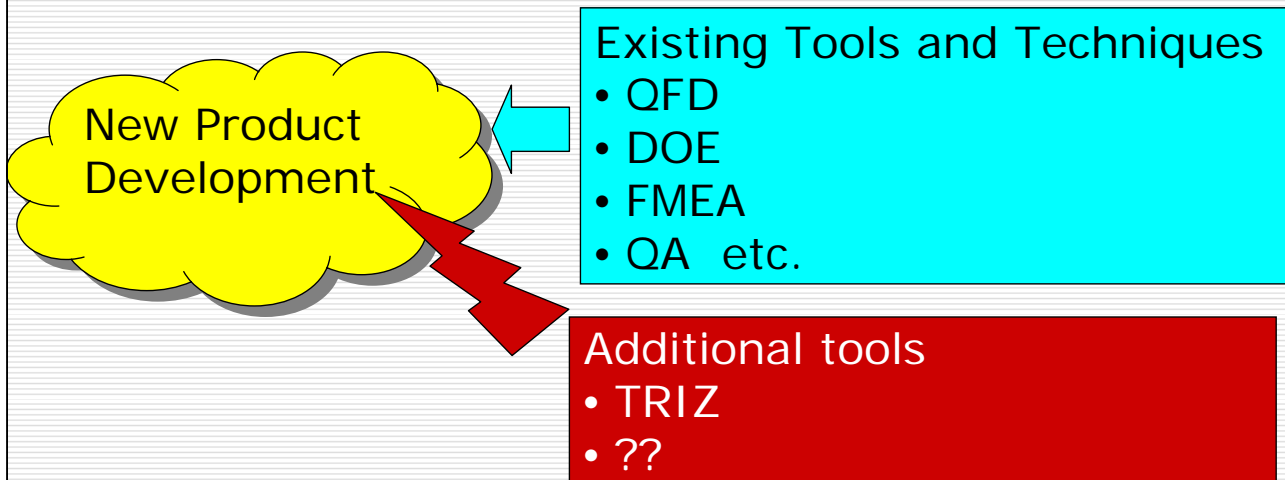
## Fact sheet about SCG

- **The largest industrial conglomerate in Thailand**
  - over 100 companies
  - 24,000 employees
  - 7 billion USD of revenue in 2006
  - TQM as the backbone of management system
  - 6 companies won Deming prize under consultation of Prof. Dr. Noriaki Kano

## Why do we need TRIZ?

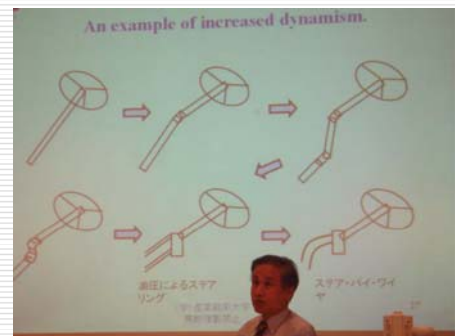
□ To support SCG's policy:

"Develop and create higher value added products and services"



# TRIZ introduction to SCG

- TRIZ Training at Technology Promotion Association (Thailand-Japan), TPA by Mr. Shinsuke Kurosawa of the Sanno Institute of Management
  - “Practical Contemporary TRIZ”
  - “Contemporary TRIZ for Product Planning and Development”



# TRIZ introduction to SCG

- TRIZ study mission trip with TPA
  - “Product and Process Innovation by TRIZ’06 in Japan”, visiting
    - Sanno Institute of Management
    - Hitachi R&D
    - Fuji film
    - Panasonic center
    - Nissan

# Lecture at Sanno Institute of Management

法人 産業能率大学  
THE SANNO INSTITUTE OF MANAGEMENT

総合研究所  
産業能率大学大学院  
産業能率大学  
産業能率大学

- Oct 9, 2006
- By Mr. Shinsuke Kurosawa
- Topic: TRIZ today, history and theory



## Activities on TRIZ and Other Techniques in Power & Industrial Systems R&D Laboratory

สวัสดีครับ  
*Good Afternoon*

ยินดีต้อนรับสู่ฮิตาชิ  
*Welcome to Hitachi, Ltd.*

for Study Mission on "Process and Product Innovation by TRIZ"  
Oct.10 in 2006

HITACHI  
Inspire the Next



# Fuji Film



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CORPORATE Total Quality Promotion Center



**SCG**  
SIAM CEMENT GROUP



- ☐ Oct 12, 2006
- ☐ Visit Panacenter Tokyo
- ☐ Topic: What Panasonic see in the future?

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CORPORATE Total Quality Promotion Center



**SCG**  
SIAM CEMENT GROUP

# TRIZ introduction to SCG

- TRIZ forum for knowledge sharing Q1, 2007.  
200 participants from SCG

2006 TRIZ Symposium

How Should We Utilize TRIZ  
for Managing Industries?

Product and Process Innovation By Triz  
in Japan 7-14 Sep, 2006



Application of TRIZ in TMMA

**TRIZ** Theory of Inventive problem solving  
Concept & Work shop to develop kaizen & theme activity



TRIZ คืออะไร ?

TRIZ

Teoriya Resheniya Izobreatatelskikh Zadatch

ทฤษฎีการแก้ปัญหาเชิงประดิษฐ์

"Theory of Inventive Problem Solving"

"วิธีการแก้ปัญหาในเชิงประดิษฐ์"

ศูนย์ส่งเสริมคุณภาพงาน สยามซีเมนต์

จังหวัดขอนแก่น สหกรณ์การเกษตร

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CQMS



SCG

# TRIZ introduction to SCG

- In-house TRIZ training Ex.
  - Corporate Total Quality Promotion Center
  - Thai Ceramic Co., Ltd.
  - Cementhai Logistic
  - ...



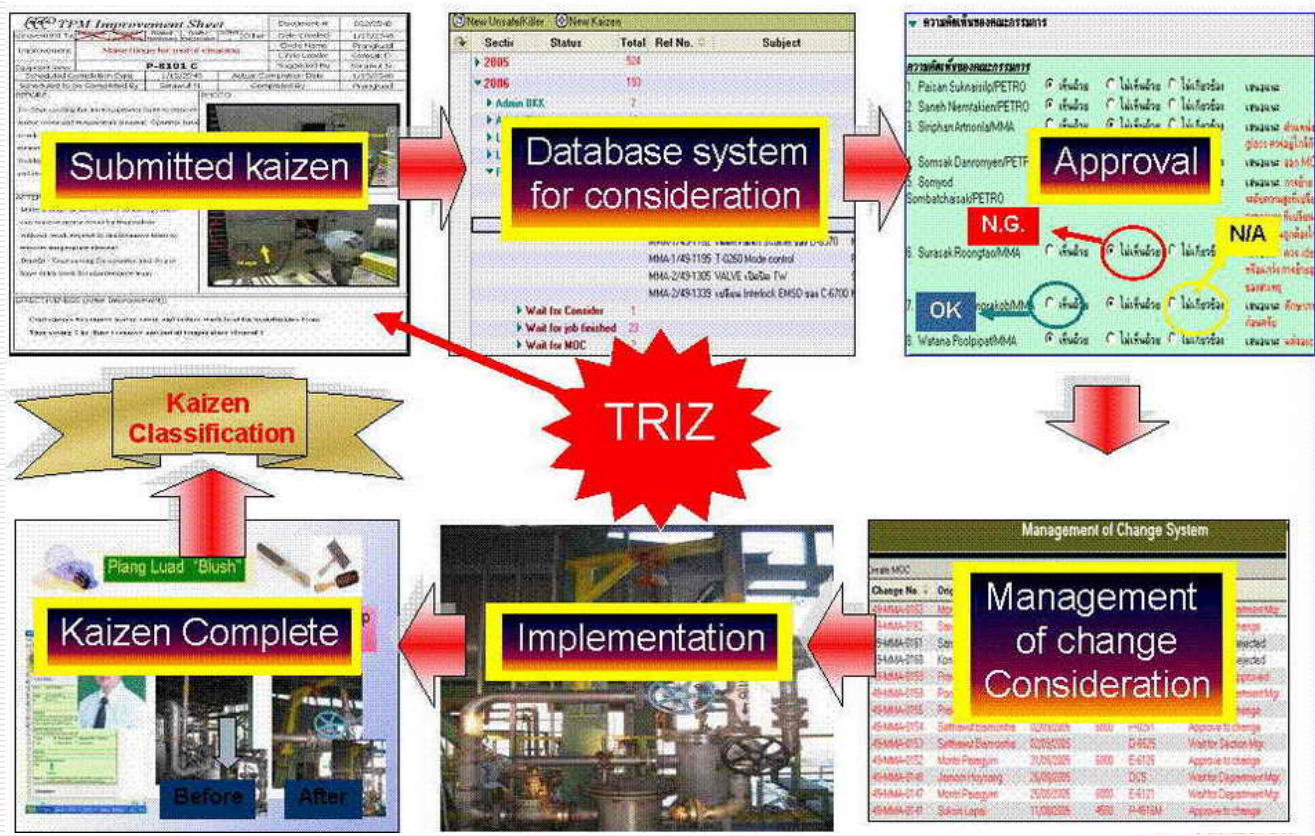
SCG  
SIAM CEMENT GROUP

# TRIZ introduction to SCG

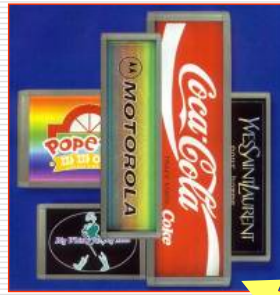
- Attending TRIZ conference
  - Learning from real cases
  - Focus on “Process” of implementation and how to “integrate” with other tools



## Example of integrating TRIZ with kaizen system at Thai MMA Co., Ltd.



## Product Application of TMMA



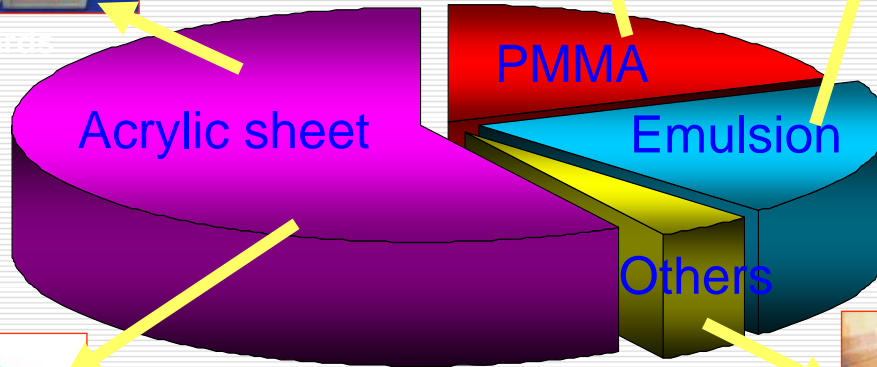
Sign Boards



Car Tail Light



Ingredient for Acrylic Paint



SCG Total Quality Promotion Center



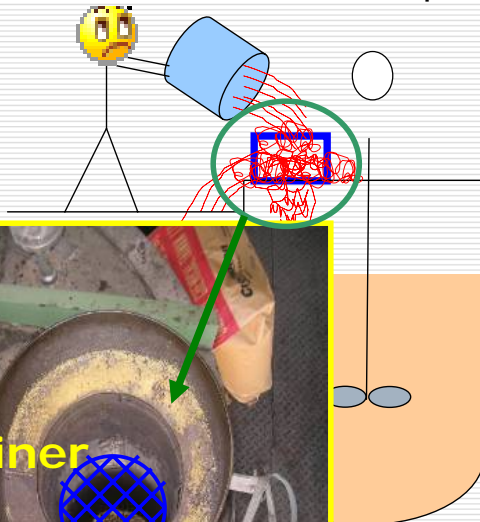
SCG

## The example for TRIZ Kaizen by shop floor operators

### Case: Zero Inhibitor spillage

#### Before

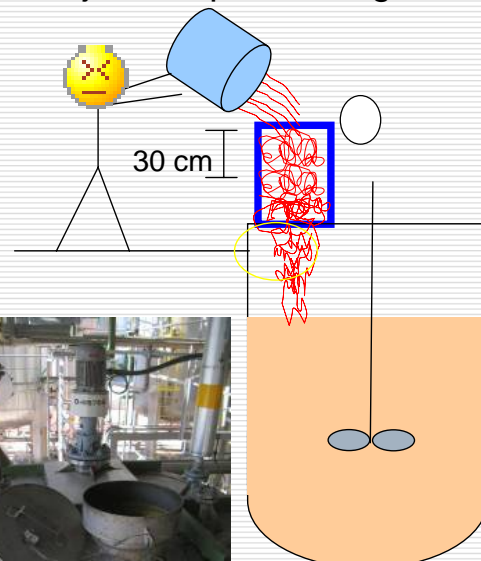
Inhibitor spillage from No Suitable shape



Strainer

#### Corrective action

Adjust shape but length is higher



SCG Total Quality Promotion Center

SCG

# By Using CONTRADICTION MATRIX

Improving feature → Shape

Worsening feature → length of stationary object

## Solution

13. Do it in reverse

14. Spheroidality

10. Prior action

7. Matrioshika

		1	2	3	4	5	6	7
	Improving Feature	Weight of moving object	Weight of stationary object	Length of moving object	Length of stationary object	Area of moving object	Area of stationary object	
0	Speed	2, 28, 13, 38		13, 14, 8		29, 30, 34		7, 29, 34
10	Stress or pressure	8, 1, 27, 18	18, 13, 1, 28	17, 19, 9, 36	28, 10	9, 10, 15	1, 18, 36, 37	15, 9, 12, 37
11	Stress or pressure	10, 6, 27, 40	9, 29, 10, 19	35, 10, 14, 16	35, 1, 14, 16	10, 15, 36, 28	10, 15, 36, 37	6, 35, 10
12	Shape	8, 10, 29, 40	15, 10, 26, 3	29, 34, 5, 4	13, 14, 10, 7	5, 34, 4, 10		14, 4, 15, 22
13	Stability of the object's composition	21, 35, 2, 39	26, 39, 1, 40	13, 15, 1, 28	37	2, 11, 13	39	28, 10, 19, 39

13

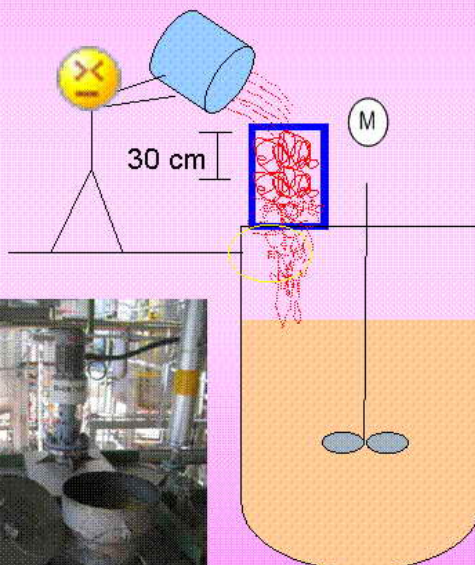
CORPORATE

SIAM CEMENT GROUP

## “Do it in reverse”

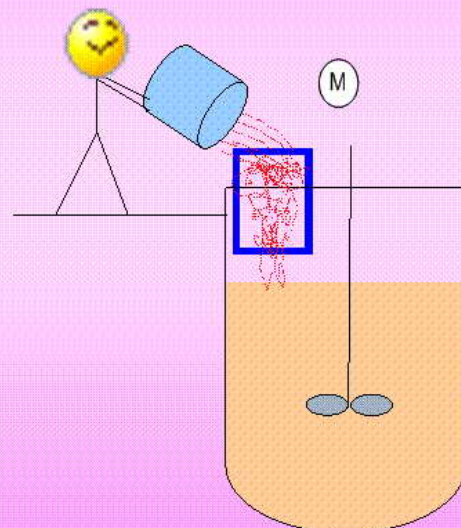
Normal Kaizen

Hard to elevate



Kaizen + TRIZ idea

Zero spillage & easy work



K  
A  
I  
Z  
E  
N

# TRIZ application plan in SCG

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## ☐ Phase 1 (2007-2008)

- Integrate with kaizen system for Technical problem solving in factory
- Integrate with QFD to solve conflicting quality elements for new product development
- Integrate with Task Achieving QC story

## ☐ Phase 2 (2009 onward)

- Full product planning and development according to TRIZ framework
- Integrate with TRM



## Questions

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- ☐ How TRIZ is applied with service business Ex. Logistic?
- ☐ From your experience, what are pitfalls in introducing TRIZ and how to avoid them?
- ☐ TRIZ is a technical tool. How to make top management buy-in quickly?

