What makes Korea so enthusiastic about TRIZ?

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KATA, Korea Academic TRIZ Association
About the author

Jeongho Shin, Ph.D.

• Secretary General, KATA (2013.01~current)
  • KATA = Korea Academic TRIZ Association
• CEO, an innovation consulting firm, eTRIZ (2012.03~current)
• TRIZ team leader, LG Electronics (2005-2012)
• Ph.D. in Mechanical engineering from KAIST (2005)

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What are you enthusiastic about?

- Food
- Sports
- Travel
We’re here because we are enthusiastic about TRIZ.
What makes Korea so enthusiastic about TRIZ?
Enthusiasm of KATA
About KATA

- Korea Academic TRIZ Association
- Founded in May 2010
- Industry-Academia Knowledge sharing
- Contributor for industry competitiveness and Creative talent by TRIZ

KATA Members

32 Companies

29 Universities
Main Activities

2 Annual Conferences

International
Global TRIZ Conference
(Every July)

Domestic
Korea TRIZ Festival
(Every November)

TRIZ publications

Journal of KATA
(Annual)

TRIZ news
Activity History

- Nurturing creative talent
- Expanded use of TRIZ and social contribution
- Problem-solving, Patent-creation
- Technical TRIZ application
- Biz. TRIZ research

Timeline:
- 2010: Consulting for SMEs, TRIZ Youth Academy
- 2011: Lectures for SMEs
- 2012: MATRIZ & KATA MOU, TRIZ education, Charity fair, Consulting for SMEs problem-solving
- 2013: Anti-school violence program, Anti-school violence program

Evolution

KATA

Jeongho Shin, ‘What makes Korea so enthusiastic about TRIZ’, The 9th TRIZ Symposium in Japan
GTC2013 program

Main Theme: Creative Thinking with TRIZ

Keynote Speakers

(美) Simon Litvin
(President of GEN3 Partners)

(英) Karen Gadd
(President of Oxford Creativity)

(日) Toru Nakagawa
(Professor of Osaka Gakuin Univ.)

(日) Makoto Takahashi
(President of Soken Research Institute)

Presentation of global best practices (39)

- Practical Session (16), Scientific Session (13), Education Session (10)

Tutorials

- Major directions of modern TRIZ development (Simon Litvin)
- Successful TRIZ with clear thinking and fun (Ms. Karen Gadd)
Enthusiasm of Korean Companies and Univ.
Secrets of Samsung’s Innovation

March 7, 2013

Haydn Shaughnessy, Contributor
I write about enterprise innovation.

What Makes Samsung Such An Innovative Company?

There are critics of Samsung who argue that its success is mostly due to copying and then tweaking the innovations of others. There is a good deal of truth in this, especially around the early Galaxy designs.

But Samsung is a global leader in screen technology, TVs, batteries, and chip design. So in terms of innovation it is doing a lot right. But we know very little about how.

The Samsung headquarters (Photo credit: Wikipedia)

• What TRIZ did for Samsung
  • Early success with TRIZ, saving over $100 million.
  • Developed a creative elite using TRIZ
  • Fast follower → innovative leader

• Secrets of Innovation
  • Heavily invested in its people
  • Innovation culture based on
    • Extensive training
    • Repeatable methodology
    • Creative elite formation
    • The highest levels of management
**History**

- 1998
  - Firstly introduced (‘98)
  - Organized TRIZ team (‘01)
  - Invited Russian experts
  - Samsung TRIZ Association (‘03)
  - Started Samsung TRIZ Conference (‘06)

- 2006
  - Accelerating propagation
  - Organized TRIZ Communities
  - Developed TRIZ S/W(I-Spark)
  - TRIZ Idea DB

- 2010
  - Fostering TRIZ Pro
  - TRIZ Synergy Council (12~)

**Application**

- **TRIZ Training program**

<table>
<thead>
<tr>
<th>Program</th>
<th>~’12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic</td>
<td></td>
</tr>
<tr>
<td>Online</td>
<td></td>
</tr>
<tr>
<td>1 month</td>
<td>24,700</td>
</tr>
<tr>
<td>Level 1</td>
<td></td>
</tr>
<tr>
<td>Basic tools</td>
<td></td>
</tr>
<tr>
<td>1 week</td>
<td>3,963</td>
</tr>
<tr>
<td>Level 2</td>
<td></td>
</tr>
<tr>
<td>Expert</td>
<td></td>
</tr>
<tr>
<td>Advanced</td>
<td></td>
</tr>
<tr>
<td>2 weeks + work-site projects(5 months)</td>
<td>657</td>
</tr>
<tr>
<td>Level 3</td>
<td></td>
</tr>
<tr>
<td>Pro</td>
<td></td>
</tr>
<tr>
<td>Strategic project</td>
<td></td>
</tr>
<tr>
<td>10 weeks</td>
<td>67</td>
</tr>
</tbody>
</table>

- **TRIZ projects & Patents**

<table>
<thead>
<tr>
<th></th>
<th>Projects</th>
<th>Patents</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>329</td>
<td>174</td>
</tr>
<tr>
<td>2011</td>
<td>380</td>
<td>142</td>
</tr>
<tr>
<td>2012</td>
<td>392</td>
<td>154</td>
</tr>
</tbody>
</table>

- Securing Core technology (42 %)
- Quality Improvement (41 %)
- Cost Reduction (9 %)

**Features**

- Progressive propagation
- Extensive Training
- Project based Training
- Developed TRIZ Project Roadmap

POSOCO

**History**

- **2003**
  - Firstly introduced

- **2010**
  - Established TRIZ University (Feb. 1st 2010)
  - Starting presidential member of KATA (May 2010)
  - Produced the first non-Russian TRIZ master (Aug. 2010)
  - POSCO family TRIZ conference (Nov. 2010)

- **2012**
  - Annual TRIZ conference

**Application**

- **TRIZ Training (2010)**
  - 62 classes → 1,800 students in TRIZ University (3.4 times)

<table>
<thead>
<tr>
<th>Year</th>
<th>Students</th>
<th>Instructors (L3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>529</td>
<td>2</td>
</tr>
<tr>
<td>2010</td>
<td>1,800</td>
<td>10</td>
</tr>
</tbody>
</table>

- **Business Performance of TRIZ**

<table>
<thead>
<tr>
<th>Year</th>
<th>Projects</th>
<th>Patents</th>
<th>Financial Performance (KRW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>53</td>
<td>27</td>
<td>107 billion</td>
</tr>
<tr>
<td>2010</td>
<td>123</td>
<td>78</td>
<td>277 billion</td>
</tr>
</tbody>
</table>

- Innovation PJT (20%)
- Independent PJT (72%)
- Affiliates PJT (8%)

**Features**

- **POSCO 3.0**
  - Go with company’s strategy
  - Extensive Training in TRIZ University
  - TRIZ University

- **Unique working frame**
  - PRIZM
  - POSCO TRIZ inside Methodology


Jeongho Shin, ‘What makes Korea so enthusiastic about TRIZ?, The 9th TRIZ Symposium in Japan
SK Hynix

**History**

- SK Hynix
- Semiconductor manufacturing company (24% worldwide market share in DRAM market)

2008
- Firstly introduced

2010
- Diffusion

2011
- Settlement

**Application**

- Developed SK Hynix TRIZ Process
  - Composed with two categories based on ARIZ
  - Problem analysis with **convergence** thinking
  - Solution deriving with **divergent** thinking

- Multi-field TRIZ Project team
  - Team formation with members from various engineering areas

**Features**

- Focused on developing user-friendly method which is suitable for various engineering fields

  - Fun & easy TRIZ

  - Immersion Process

  - Immersion room

  - Intensive Workshop

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TRIZ applications of Korean Companies

**Problem-solving & Core patent creation**

**Samsung**
- Core tech & innovative product
- TRIZ Elite
- TRIZ research group

**Posco**
- Foundation of TRIZ Univ.
- Development of POSCO methodology
- Internal TRIZ Conference

**Hyundai**
- Mixing DFSS & TRIZ
- Patent creation
- TRIZ research group

**SK hynix**
- Strategic R&D patent creation
- On-site TRIZ process designed to improve on-site work performance
### TRIZ applications of Korean Universities

#### Teaching TRIZ for Creative Design

<table>
<thead>
<tr>
<th>POSTECH</th>
<th>HANYANG</th>
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<tr>
<td>Master course</td>
<td>Creative design</td>
</tr>
<tr>
<td>TRIZ projects</td>
<td>Business management and engineering</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>YONSEI</th>
<th>POLYTECHNIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creative engineering education</td>
<td>Mechanical engineering</td>
</tr>
<tr>
<td>Inter-discipline activities</td>
<td>KOREA/ RUSSIA cooperation center</td>
</tr>
<tr>
<td>Engineering certification program</td>
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</table>

※ TRIZ application supported by the government and research institutions
Interview with TRIZ team leaders
Interview overview

- Telephone interview
- Interviewed 7 leaders of TRIZ team from 4 companies
- Date: Aug. 1st ~ 15th, 2013
Major Interview Questions

Selected from 20 questions

What kinds of obstacles did you have on adopting TRIZ?

How could you overcome those obstacles?

What can be major contributions of TRIZ for the company?

Do you have any advice for the company who wants to adopt TRIZ?
1. Obstacles

- We don’t need another new tool any more.
- We don’t have TRIZ expert in the company.
- We don’t know how to convince our top manager.
- We have too much burden of developing outcome.
- We are so afraid of failure.
2. Overcoming Obstacles

- Organizing TRIZ Communities
- Inviting TRIZ specialists and having open lectures
- Continuous reporting of TRIZ outcomes
- Combining TRIZ with existing 6 sigma process
- Top-down approach
3. Contributions of TRIZ

- Bottleneck problem solving
- Securing core patents
- Strengthen conceptual design capabilities

- Culture for creative thinking
- More opportunities for more people
- Enhanced collaboration

- Fostering elite engineers
- Self-confidence of members in problem solving
4. Advices for newcomers in TRIZ

- Training & Application
  - Combine training with real business issues
  - Participate all the member in introductory seminar
  - You don’t need to make them all TRIZ experts
  - Foster a few members selected as TRIZ experts
  - Try to get growing energy from the field side

- General
  - Use external experts and consulting firms well
  - Don’t focus on developing Best practices
  - Quantity can make Quality
  - Select core members who have enthusiasm in TRIZ
  - TRIZ related S/W is not dispensable
  - Firstly focus on making innovative infrastructure, then TRIZ can do something
What makes Korea so enthusiastic about TRIZ?

- Extensive Training
- Practical application
- Progressive effort

Enthusiasm about TRIZ
Nothing great was ever achieved without enthusiasm.

(Emerson)